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# USSR Report

## NATIONAL ECONOMY

EKO: ECONOMICS AND ORGANIZATION OF  
INDUSTRIAL PRODUCTION

No 12, 1986



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Except where indicated otherwise in the table of contents the following is a complete translation of the Russian-language monthly journal EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA published in Novosibirsk.

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## EFFECTIVE RESOURCE UTILIZATION DESCRIBED

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[Article by S. S. Shatalin, corresponding member of the USSR Academy of Sciences, Institute of Economics and Prognostication of Scientific and Technical Progress of the USSR Academy of Sciences (Moscow): "Effective Utilization of Resources: Interests and Stimuli"]

[Text] "Labor productivity, in the final analysis, is the most important, the main thing for the victory of the new social system." [Footnote 1] In other words, socialism will win out in world competition with capitalism if it provides for high effectiveness of the utilization of all production resources. This depends to a considerable degree on resolving a principal problem: Will socialism be able to create a more effective motivational mechanism for optimal utilization of resources than capitalism does? In particular, it should preclude a permanent shortage of products and actually transform the consumer into the judge of the quality of the functioning of the economic system. This problem is complex and has many aspects. In an article with a limited amount of space one can only formulate its basic elements and earmark the general contours of an approach to solving it.

For the following discussions we shall use this working hypothesis: We shall consider optimal (the most effective) to be the level of utilization of material, labor and natural resources which provides for maximum satisfaction of the needs of the population. At the current level of development, the strategy in the area of national well-being proceeds from the idea of providing for all social segments and groups a level of consumption of goods and services which forms an economic basis for satisfying the rational, reasonable demands and for the harmonious development of the individual. Herein lies the essence of the socialist model of consumption.

In the West socialism is frequently depicted in the form of a model of rationing, a coupon system of distributing consumer goods and services. This is incorrect. While controlling the formation of reasonable demands in a planned way, the socialist society certainly does not impose a selection on a consumer, but only helps to make it conscious and purposive.

But in this connection it is necessary to overcome another deception that is prevalent in our society. The ideals of the consumer society, thingism, accumulation and greediness are alien to socialism by its very nature. The achievement of consumer ideals in our society should not be based on an artificial limitation of consumption but should be carried out on the basis of a standard of living which is growing at high and rapid rates, the provision of general and structural balance in the consumer sector of the economy, increasingly complete satisfaction of the objectively growing demands of the population for creative labor, education, culture, housing, public health, information and so forth.

A system of motivations for workers to achieve highly productive labor under socialism is sometimes equated with a system of material and moral incentives, and the former is usually understood to mean wages. This approach seems to us extremely one-sided, reflecting at best only part of the real processes. In our opinion, the mechanism of interests and incentives for effective utilization of production resources under socialism includes at least the following variants:

wages;

provision of efficient and socially and economically effective complete employment of the population;

the nature of labor, its conditions and organization;

the level of balance in the consumer sector of the economy;

a consistent fight against unearned income;

a ramified system of social guarantees of satisfaction of the socially most significant, priority demands;

the degree of real participation of the workers in the management of public production at all levels of the national economy;

a system of moral-ethical, cultural, ethnic and historical values of the society and its individual social segments and groups;

a mechanism for making decisions concerning the distribution of resources at the level of enterprises, associations, regions and the national economy;

the measure of political maturity of the society and its democratization.

Of course, each of these elements has a different influence on various social segments and groups, but nonetheless taken together they can be regarded as a fairly comprehensive socioeconomic system. Let us consider each of these elements.

## Wages

The party considers one of the most important conditions for realizing the concept of acceleration of socioeconomic development to be all-round strengthening of the principle of distribution according to labor, strict coordination of wages with final results, and the overcoming of leveling which has caused and continues to cause a good deal of economic and social harm to the society.

The shortage of labor force has weakened the stimulating role of wages. The objective conditions for this phenomenon are the prevalence of extensive tendencies, the lack of coordination of factors in economic growth (labor force and fixed capital), the artificial surplus of jobs, and the low rates of increase in labor productivity. The necessity to fill work positions has forced us to increase wages for workers in these jobs without taking into account the real results of their labor. According to our calculations, at the end of the 1970's filling the jobs gave the worker an average "advantage" of 25 rubles a month, which exceeded the incomes from the material incentive fund. Herein lies a basic shortcoming of the existing economic mechanism.

Intensification of production and the desire to improve product quality have given rise to numerous systems of bonuses that are directed toward autonomous incentives for various parameters of the effectiveness of production. These systems have not produced the desired result, but have increased the disparity between wages and the real labor contribution. Bonus payments for the basic activity have been transferred into a permanent increment to wages.

Another channel for unjustified growth of wages is the existing system of compensation for unfavorable working conditions whereby it extends to workers who actually have socially normal working conditions. Investigations show that at reorganized enterprises 15-20 percent of the workers continue to enjoy their previous benefits and compensations for working conditions although these conditions have been brought up to the socially normal level as a result of reorganization. The situation is fairly widespread in which workers obtain wages in spite of the fact that they are not in their work positions. The clearest example is when they are taken away for agricultural work.

During the past 20 years ratios have deteriorated in wages for individual categories of workers (workers--engineering and technical personnel and employees, piece-rate workers--time-rate workers) and spheres of the national economy (material production--the nonproduction sphere). In 1965 the average monthly monetary earnings of engineering and technical personnel amounted to 148.4 rubles and workers--101.7 rubles, while in 1984 these figures were 228.1 and 205.5 rubles, respectively. If the existing tendency continues, under the 12th Five-Year Plan the wages of workers will exceed the wages of engineering and technical personnel. This corresponds neither to the objective differences in the labor of these categories of workers nor to their role in the organization of scientific and technical progress. The absolutely and relatively low level of wages in the nonproduction sphere has a negative influence on increasing the educational potential, the cultural development and the protection of the health of the citizens. Now wages in nonproduction branches amount to approximately 70 percent of the analogous indicator in

material production (in the CEMA countries--80 percent) and this ratio has a tendency toward reduction. Wages in science and scientific service are also lagging behind. In 1965 the average monthly monetary earnings in science and scientific service amounted to 120.6 rubles and in industry--104.2 rubles, while in 1984 these figures were 198.3 and 204.6 rubles, respectively.

And so the stimulating influence of wages on highly productive labor is decreasing. What would help to overcome this dangerous tendency? Let us list the basic directions for increasing the stimulating role of wages, which we have already begun to carry out partially under the current five-year plan:

elimination of leveling in wages on the basis of increasing the differentiation of earnings according to the real labor contribution and the abolition of unjustified limitations on the growth of wages for actual achievements in labor;

an optimal combination of centralized and cost-accounting methods of regulating wages which presupposes a simultaneous increase in the role of the state in conducting the unified wage policy and consistently strengthening cost accounting, as well as a significant expansion of the rights of labor collectives in the control of wages;

a sharp increase in collective forms of payment for labor on the basis of expansion and deepening of the collective contract;

provision of higher rates of wages for engineering and technical personnel and people employed in the nonproduction sphere.

It is important to strengthen and intensify these directions, taking into account the experience of our economic construction and that of the fraternal socialist countries, which is constantly being enriched.

#### Efficient Employment of the Population

Now we will have to provide for actually efficient employment and economic conditions that motivate each worker to value his work position and constantly increase his qualifications and labor productivity. For socialism is not a philanthropic society where each worker is allowed practically automatically to hold a work position where his work is certainly not always satisfactory. It is necessary to have a unified state system of retraining, distribution, placement and material support for workers released from existing production under the influence of structural changes and improvement of its organization, and also under the influence of scientific and technical progress. It seems expedient to relieve managers of enterprises, institutions and institutes of the task of placing workers that have been released (this is more the function of special social-regional institutes) and to expand their rights in planning the number of employed people and establishing the level of wages. In other words, it is necessary to distinguish clearly between economic and social functions in providing for full employment of the population.

#### The Nature and Conditions of Labor

In the national economy, unfortunately, there is still a large proportion of manual labor, frequently less skilled, heavy labor that is harmful to the health. The number of uncomfortable, outdated work positions is decreasing extremely slowly. The real situation is now such that many workers will not agree to work in these uncomfortable work positions even for higher wages. This means that it is necessary to have many billions of rubles' worth of investments for radical transformations in the sphere of labor. The Basic Directions for the Economic and Social Development of the USSR During 1986-1990 and the Period Up to the Year 2000 envisioned by the end of this period reducing the proportion of manual labor in the production sphere to 15-20 percent. By 1990 more than 5 million people will be released from manual labor, which is more than twice as much as during the past 5 years. It is intended to conduct complete certification and streamlining of work positions. This work will be truly comprehensive and effective if it is based on social characteristics of work positions augmented by social standards whose achievement is mandatory.

Without radical changes in the conditions and nature of labor it will be impossible to transform it into a primary vital necessity of the harmoniously developed individual. And this is the basis for radical changes in the sphere of production, distribution and consumption of material goods and services.

#### The Achievement of Balance in the Consumer Sector of the Economy

At the present time, the imbalance in this sector is fairly high. This leads to extremely negative economic and social consequences: speculation, bribery, redistribution of income that is not controlled by the society, devaluation of the ruble, undermining of confidence in the socioeconomic actions of the socialist state, and so forth. Hence it is crucial to solve this problem.

It is emphasized in the materials of the 27th Party Congress that the main thing here is acceleration of the rates of growth of the production of consumer goods and paid services, a considerable improvement in their quality and an expansion of their assortment. By the year 2000 the output of nonfood commodities should increase 1.8-1.9-fold as compared to 1985 and 1.35-fold by 1990, and modern goods for cultural-domestic and household use--2.0-2.1 and almost 1.5-fold, and paid services--2.1-2.3-fold and 1.5-fold, respectively. As is pointed out in the political report of the CPSU Central Committee to the 27th Party Congress, decisive measures must be taken to eliminate the sharp disproportion between the demand for services and the supply of them. This should apply first to services related to facilitating household labor, upkeep and repair of apartments, tourism, and automotive service, the demand for which is increasing especially rapidly. There will be an increased proportion of cooperative and individual housing construction and a principle will be introduced of a social guaranteed minimum of free housing for the population, beyond which it will be paid for by the population. There is to be closer coordination between wages and the amount and quality of dwelling space that is occupied, no less than 1 million garden and orchard plots will be allotted each year, and the necessary amounts of paid services for developing them will be organized.

Even under the 12th Five-Year Plan it will be necessary to take a decisive step in the implementation of the USSR Food Program. At the same time other measures are earmarked for providing for general and structural balance in the consumer sector of the economy. It is necessary to bring order into price setting. "Artificially increasing prices does not cure economic illnesses," said M. S. Gorbachev at the June (1986) Plenum of the CPSU Central Committee, "but only corrupts the workers and impedes technical progress. Elevated prices based on the expenditure approach conceal shortcomings in the technology and organization of production and generate neglect of the search for economical methods of management. Increasing prices is justified only if it is brought about by an essential improvement in the consumer qualities of the goods and higher effectiveness of the items."

The system of retail prices that took form 25-30 years ago has largely become outdated and poorly reflects the level of socially necessary expenditures on the production of products, and it does not correspond to the modern conditions for the production of goods or the real ratios between supply and demand. These prices do not stimulate the output of high-quality products since the producer is dealing exclusively with wholesale prices which are in no way related to retail prices. It would seem that there is a need for a comprehensive reform of retail prices. Under the conditions of the extremely unbalanced market it cannot but lead to a rise in their average level. Consequently, we need carefully thought out measures of compensation for additional expenditures of low-paid groups of the population. In turn, this also directly affects the system of monetary incomes of the population, which also, naturally, must be informed. These incomes should grow only as the final results of labor increase, and they should be coordinated with the real increase in the production of material consumer goods.

#### The Fight Against Unearned Incomes

In the decrees of the USSR Central Committee and the USSR Council of Ministers, "On Measures for Stepping Up the Fight Against Unearned Incomes" and in the Ukase of the Presidium of the USSR Supreme Soviet, "On Stepping Up the Fight Against Drawing Unearned Incomes" eradication of unearned incomes that are alien to the nature of socialism is regarded as an important political, socioeconomic and educational task. Here it will be necessary to mobilize all the legal strength of the state and the increasing social awareness of the workers.

Now there are at least the following kinds of unearned incomes:

from speculation, bribery and corruption caused by the imbalance in the consumer sector in the large proportion of administrative distribution of resources;

incomes of individuals who render private services at arbitrarily high rates;

"monopolistic-rent" incomes on private subsidiary farms, which are also received frequently without the participation (complete or partial) of their owners in public production;

direct theft of socialist property;

excessively high incomes whose level is difficult to justify by economic, social or moral-ethical considerations.

The measures for eliminating them have basically been determined by the aforementioned directive documents. It would seem expedient to establish a stable balance in the economy, especially in the consumer sector; to organically include individual forms of production of goods and services (which are now "neither here nor there" (in the sphere of public production under conditions that are economically advantageous both to the producers and to the consumers; to conduct a reform of the agricultural tax and taxation of incomes, especially excessively high ones; to coordinate more completely the real material situation of the workers with the results of the activity of the labor collective as a whole; and to considerably expand the rights of workers in the management of socialist property.

#### The System of Social Guarantees

We are speaking about an extensively developed, goal-directed system of public consumption funds (OFP) on the basis of which the demands with top social priority are satisfied. In principle the OFP's perform the social function of distribution. Their actual economically stimulating function consists, in our opinion, in the following:

they directly improve the quality of the labor force which under the conditions of the scientific and technical revolution is becoming an increasingly important factor in their realization;

having an effective system of OFP, the socialist society can more boldly and radically utilize economic mechanisms of motivation (for example, higher differentiation in wages) without fear of increasing social tension.

It is precisely here, and not in the expansion of departmental OFP's that one must look for additional sources of material incentive which apply to all workers regardless of where they may live or work. As concern social funds of enterprises and production associations, they should be expended primarily for improving working conditions. Let us add that in this case these funds are joined by production capital investments which should be used to an ever increasing degree for creating modern comfortable work positions.

A problem of principal social and economic importance is the equalization of the equipment of facilities of the social infrastructure for the population who live in large, medium-sized and small cities, rural areas and various regions of the country. Therefore it is absolutely certain that beginning with the 12th Five-Year Plan the social infrastructure will be created at more rapid rates in medium-sized and small cities, rural locations, and regions of Siberia and the Far East, Central Asia and the Nonchernozem Zone. This will lead to a considerable increase in the economic effectiveness of the utilization of production resources.

Improvement of wages augmented by a developed system of social guarantees would mean a real advancement of the society along the path of ever closer approach to socialist social justice, whose complete establishment is inseparable from the course toward acceleration.

#### Real Participation of Workers in Production Management

In our opinion, this is the central, pivotal problem in the creation under socialism of a motivation mechanism which is stronger and more effective than that under capitalism. It is precisely here that we must win in the struggle for the greatest effectiveness of the utilization of material, labor and natural resources. Here the society of co-owners of socialist property should be stronger than a society that is divided into masters and those who are exploited. Here the "proprietary" motivations of socialism should end up to be stronger and more effective, more recognized and purposive than in the atomized society of the West. But one must say directly that we are only groping along the path to solving the most difficult, multifaceted problem which we cannot avoid or bypass either economically, socially or politically.

The main thing here, as was pointed out at the 27th CPSU Congress, is to disclose all the wealth of relations of public socialist ownership of the means of production. The criterion, in our opinion, is the creation of a stable, dynamically developing system of truly socialist proprietary motivations and complete and final surmounting in all members of the society of elements of alien nations and the attitude toward socialist property as to something fiscal and bureaucratic, like being "one's own and somebody else's" at the same time. It is precisely the creation of a real complex of proprietary motivations that should become the basis for a radical improvement in the economic mechanism for the functioning of the socialist economy and the ideological, economic and social platform for consistent implementation of the strategic course developed by the party toward significant expansion of economic independence and responsibility of enterprises and production associations, sovkhozes and kolkhozes while strengthening centralized foundations in planned management of the economy and solving key strategic problems of its development. The latter requires a special clarification for frequently there is confusion and sometimes both political and ideological speculation as well as the attaching of labels.

Some objective patterns are the growth and deepening of social division of labor, collectivization of production, and the fact that productive forces are assuming a more social nature. Naturally, this leads to the development of production relations which are under socialism, do not take place and cannot take place randomly, automatically on the basis of a free "play of economic forces." Collectivization of production and the development of productive forces also require adequate improvement of forms and methods of centralized planned management, its strengthening and its increased effectiveness. This does not mean an increase in directly established planning and evaluation indicators of the activity of local cost accounting units or attempts to plan "everything and anything" from the center, or to increase the proportion of funds which the enterprise must turn over to the state budget.

The real force, the efficiency and the effectiveness of centralized management of the economy lies principally elsewhere. Namely: in the ability to determine the optimal national economic, interbranch and interregional proportions of socioeconomic development; to find the key "sore" spots in scientific and technical progress; to guide the development of the social infrastructure from the large picture; and to establish rules of the "economic game" (prices, interest rates for various kinds of credit, payments into the budget, rent, the tax policy and so forth) which would motivate the local cost accounting units to follow quickly and flexibly along the path of national economic proportions, utilize production resources effectively, and adapt efficiently to new production and nonproduction demands. These demands cannot be envisioned ahead of time by any national economic plan (even one developed with the help of the most modern methods).

The strengthening of the centralization of planned management and the considerable expansion of economic independence and responsibilities of enterprises constitute a dialectical, organic unity in the development of methods of socialist management and are not mutually exclusive concepts."

At the 27th Party Congress they pointed out the need to support and develop in all ways the cooperative form of ownership. Its real possibilities in strengthening the motivational mechanism for effective utilization of resources began to truly manifest themselves only recently. We will have to change the widespread opinion that the kolkhoz-cooperative form of ownership is less developed than the state form. As practice shows, kolkhoz production is often significantly more effective than sovkhoz production, particularly because on the kolkhozes there are stronger proprietary motivations for highly productive labor and production democracy is more developed. It would seem that the principle of cooperating should be developed more extensively also in the nationwide sector of the economy both among associations and enterprises and within them. The forms of the collective contract that are gathering force are undoubtedly one of the alternatives.

An extremely crucial issue under modern conditions is the fate of the existing mechanism for distributing the majority of resources in the branch system of ministries and departments. We are speaking about departmental prejudices as a socioeconomic phenomenon that characterizes one of the most important features of the real manifestation of relations of public socialist property which has taken form in the stage of mainly extensive development of the economy and brings about the clear dominance of clearly economic criteria over social ones. The economic potential of the branches is not weighted with sufficient economic power of other social centers for disposing of resources (regions, target programs, cooperations, associations of consumers). As a result there are stable monopolistic effects in the socialist economy, the domination of the producer over the consumer, scientific and technical backwardness, and a chronic shortage of resources and products. Experience in carrying out reforms of the economic mechanism in the USSR (including experience in conducting the large-scale experiment) convincingly shows that the ministries are far from always interested economically and socially in the necessary restructuring. At the June (1986) Plenum of the CPSU Central Committee they discussed the fact that up to this point the central economic department sent out methodological guidelines and instructions which

essentially emasculate new provisions of management and inadmissibly limit the rights of the enterprises. A task was set to complete in the shortest possible period of time the development of a law concerning the socialist enterprise (production association) and thus lay a basis for optimal distribution of rights and responsibilities among ministries and enterprises and legislatively protect labor collectives from red tape and bureaucratic paperwork. In order to actually expand the economic rights and responsibilities of enterprises and associations, it seems expedient to radically change the functions of the ministries (to consolidate them where this is necessary and in certain cases, as with the creation of the USSR Gosagroprom, eliminate them altogether).

In economic literature suggestions have been made concerning changing the activity of branch production ministries over to cost accounting. These desires, in our opinion, are based on a misunderstanding of the role of the ministry as a purely administrative agency. Their implementation would create only the illusion of strengthening economic methods of management but in fact would exacerbate the problems of the branch departmental system, would strengthen the monopolistic position of the producers, and would raise a barrier on the path to actually necessary expansion of economic rights of production associations and enterprises as well as the effective realization of the principles of socialist competitiveness.

Thus an objective need of the modern stage where acceleration of socioeconomic development is the creation of an economic mechanism which would inherently have an integrated system of sufficiently equal "distributors" of public property (society, rayons, programs, production associations and enterprises, and cooperation, including consumer cooperation) capable of providing for institutional, economic and social balance of national economic development. This is a balance which realizes public ownership of property as an organic unity of social, collective and individual economic interests. This unity will be directed toward all-round strengthening of proprietary motivations at all levels of the national economy.

#### The Adoption of Decisions Concerning Distribution of Resources at the Level of Production Associations (Enterprises)

What is the internal incentive for making the most effective decisions at this level? This is one of the main issues in the creation of the economic mechanism for the functioning of the socialist economy in which there is a considerable expansion of the economic independence of production associations (enterprises). All attempts to improve the economic mechanism which, unfortunately, have not yet produced stably positive results, revolve around the answer to this question. Do the motivations of the general director (board of directors of the association) coincide with the individual economic interests of the workers in the labor collectives? Why must he be concerned (as the economic contracting agent of public production) about the growth of the wages of the workers, the increase in the development funds, material incentives, social and cultural measures and housing construction? There are many questions like these which economic science practically does not answer. The author of this article does not claim this either, wishing only to express certain preliminary considerations.

In the west, the shareholders exert a great deal of pressure on the decisions of the firm, and the managers cannot but take their will into account if they want to remain in this role for very long. Under socialism such a mechanism does not exist: the managers are responsible to managers of a higher rank. They appoint them, give them bonuses and incentives, remove them and so forth. Consequently, the managers of associations (enterprises) live not only in the world of real economic effectiveness and responsibility which they recognize as their own objective economic interest, but, first and foremost, in a world of administrative subordination. This distorts the actual economic relations for more effective utilization of resources.

The selectivity of such managers, their major responsibility to the collective that has selected them, and the creation of the enterprise council which actually decided on strategic problems of its development--such, in our opinion, are the general contours for solving the problems that have been formulated. Only collective responsibility, augmented by principles of one-man management, will provide for a real internal incentive to select the most effective variants of the utilization of material, labor and natural resources and at the same time will create a mechanism of economic responsibility for incorrect planning and economic decisions.

It will be necessary to do an immense amount of work in order for the prestige of the given enterprise to become a real economic phenomenon on which all of its workers are interested in working so that the loss of a work position at it will be perceived in terms of the serious economic and life consequences.

#### The Mechanism for Distributing Resources at the Level of the Society as a Whole (Region)

We have become accustomed to the thesis that it is necessary to provide for organic coordination of objective social, collective and individual economic interests. But who is the subject, the real bearer of public interest, to whom is it advantageous to look out for them, who is economically responsible for adopting the most effective decisions at the level of the society as a whole, and making the most effective capital investments? It would seem that this would be the society as a whole. But this answer is at once both wrong and unconstructive (it replaces the answer to the question with the same question). And yet capital investments made at the level of the national economy (centralized capital investments) comprise the lion's share of the overall volume. They do not enter the economic system of socialism as a free resource. Herein lies a basic reason for shortages in the socialist economy.

It would seem that in purely economic terms this problem is insoluble. Nothing will be gained by mentioning the society's economic center, for this is simply a tautology. Of course the society can compensate other economic contracting agents for losses related to its ineffective actions. This, of course, raises barriers, but they are too ephemeral. And, as has already been shown, this is not the main problem. One of the directions for solving it is expansion of the economic independence and responsibility of the enterprises, which automatically reduces the volume of free centralized capital investments

and the sphere of "public" interest. Improvement of the economic mechanisms of all the fraternal socialist countries is proceeding in this direction.

Strengthening political responsibility and the most extensive (professional arranged) public and social control are of the greatest significance here. Herein lies an essential reserve for expanding the real participation of citizens in the management of socialist property.

It seems expedient to organize a regular expert evaluation of the plans for the economic and social development of the country, the economic regions, the republics, krays and oblasts. An independent expert evaluation should give conclusions regarding all of the large plans for socioeconomic and scientific-technical development. It should not be under the jurisdiction of planning-economic ministries, but the USSR Supreme Soviet and for the republics it should be under the jurisdiction of local agencies of authority, which considerably increases the objectiveness and weightiness of its decisions. As was noted at the June (1986) Plenum of the CPSU Central Committee, it is necessary immediately, in the shortest possible periods of time, to subject to expert evaluation all plans for technical reequipment and reorganization that have been earmarked for implementation under the 12th Five-Year Plan. Those that do not correspond to the tasks of acceleration of scientific and technical progress should be resolutely rejected, their implementation should be prohibited, and the money that is released should be used for the development of advanced technical equipment.

#### The System of Moral and Ethical Values

All social relations under socialism are based on labor and therefore it must be the pivotal point of the system of moral and ethical values of the socialist society. Under socialism there is only one "class" privilege--to be a worker. But in order for this potential of socialism to be transformed into a reality, immense, purposive efforts are needed on the part of the entire society: improvement of wages, provision of rational employment, a fight against unearned incomes, the insurance of real participation of the workers in the management of public property at all levels of the national economy, and so forth.

The moral and ethical factors significantly influence the socioeconomic processes in a socialist society, but their basis is composed of actually existing economic relations. The attitude toward labor can be both a positive and a negative factor in the motivational mechanism of socialism. In the opinion of many economists and sociologists, the shortcomings that have accumulated in our society have led to a certain reduction of the social prestige and the status of honest, highly productive labor, which is done for the good of the entire society. The author of the article very regrettfully shares this position. In order to advance, we must reconquer what has already been conquered but has been partially lost. In particular, the touch of honor must disappear forever from the words "moral incentive"; it is necessary to restore completely and affirm the principle of socialist social justice, whose formula, as was emphasized at the 27th CPSU Congress, is simple: university participation in labor, payment according to the real results plus a developed system of social guarantees for satisfying the socially most significant

needs. The assimilation of this formula would mean an immense strengthening of the socialist system of motivations for highly effective labor for all workers. And this is the basis for increasing the production of goods and services and a condition for economic support of labor and a great reinforcement for it as the basis of economic, social and moral-ethical relations and values in socialism.

When creating an effective motivational mechanism for the utilization of production resources, socialism must take into account the entire totality of national, ethnic and cultural factors and traditions. Of course it must not passively adapt to them, but it should not act as though they did not exist, either. This leads to economic and social outlays. This will be the case until we fully restore one of the most important elements of Marxist-Leninist teaching concerning the reverse influence of superstructural relations on the economic base. In practice things are going well in far from all of the spheres. At the 27th CPSU Congress it was emphasized that the party is striving to rectify this situation.

#### The Measure of Political Maturity of the Society and Its Democratization

The 27th CPSU Congress developed a complex of measures for increasing the political maturity of the socialist society and in all ways democratizing all spheres of its activity. Socialism, undoubtedly, has not yet disclosed all of its potential advantages in this area. And this means that we must look at the historical perspective with economic and social optimism.

If we are able in fact to provide for a real participation of the workers in the management of socialist public property at all levels of the national economy, we will solve the problem of accelerating socioeconomic development. Socialism has every possibility of doing this.

The society of participants in socialist public ownership of the means of production, which has created the most effective motivational mechanism for working at top performance, is not a socioeconomic utopia but it is not a "gift" of the historical process either. It is generated in the struggle and in the torments of economic and social contradictions which, although they are not antagonistic, are still not simple to resolve. There are social segments which are impeding our development. Not to see this, in our opinion, means to submit to sociopolitical blindness. And the main pivotal point in the fight against these forces is the strengthening, using all of the available means that are adequate to socialism, of the position of the honorable worker, the social prestige of public labor, and the position of each member of the society as an economically, socially and politically real owner of public socialist property.

#### FOOTNOTE

1. Lenin, V.I., "Poln. Sobr. Soch." [Complete Collected Works], Vol 39, p 21.

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## CONFERENCE HELD ON DEVELOPMENT OF BRIGADE FORMS

Novosibirsk EKONOMIKA I ORGANIZATSIIA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 23-68

[Report on conference prepared by B. P. Kutyrev, candidate of economic sciences (Novosibirsk): "The Development of Brigade Forms"]

[Text] When speaking of brigades we must remember that the 27th CPSU Congress earmarked further dissemination of collective forms of organization and stimulation of labor and the economic contract. It is precisely in these that we shall see the most complete manifestation of the participation of labor collectives in increasing the effectiveness of production and improving product quality on the basis of socialist democracy, self-management and creative initiative of the masses.

The 11th Five-Year Plan, during which the brigade form of organization and stimulation of labor (BPOST) was to have become the basic one, has come to an end. Actually, brigades have become widespread, encompassing more than 70 percent of industrial workers. But this has not produced a significant economic effect. In individual cases, labor productivity has even decreased. A number of problems have been revealed which reflect a formulaic attitude toward this progressive form of organization and stimulation of labor.

In this issue of EKO we are conducting an all-union correspondence conference entitled "Development of Brigade Forms." Its task is to discuss the most frequently encountered problems associated with the introduction of brigades and control of their functioning and to suggest certain ways of solving them. In our opinion, the brigade form is universally applicable and with the proper approach will always produce a high social and economic effect.

The reports and speeches (articles and letters to the journal) have been considered by the editorial board. In

keeping with the goals of the conference and its rigid regulation, the statements have been abridged and reduced to the author's basic idea. The statements included in the magazine are considered to be a scientific publication.

The chairman of the correspondence conference is a magazine department head and candidate of economic sciences, B. P. Kutyrev.

#### Session 1. The Goal of Introducing Brigade Forms

Chairman: Production workers repeatedly asked the question of whether or not it is necessary to try to introduce brigades if labor productivity increases only insignificantly because of this form of organization and stimulation and sometimes, even worse, it declines. But experience prompts us to ask another question: are the growth rates of labor productivity not unsatisfactory because such a "frontal" goal is set? Perhaps if a different goal were set this way the practical workers would also achieve high indicators for labor productivity? What do participants in the conference have to say about this?

#### Goal and Effectiveness

V. V. Ulanov, Chief of the Laboratory for Scientific Organization of Labor of the Kaluga Machine Building Plant

Sometimes the brigade form does not produce the expected effect. The reasons for the failures are frequently seen in the formal approach of the administration, the lack of restructuring in planning, wages and so forth. But why does the administration not engage in restructuring? Out of caution, which is inherent in the evaluation of everything new? I think that it is not only because of this. In my opinion, a large role is played by the lack of clear-cut goals and their incorrect formulation.

Why are brigades created? In the standard provisions and the recommendations regarding this form it says: For purposes of accelerating the growth rates of labor productivity, improving product quality...but is it not true that everything else in improving organization of production, labor and management is directed toward these same goals? And was individual piece-rate work introduced with different goals?

The most consistent of all are those who have seen in the brigade a means of eliminating the shortcomings of individual piece-rate work (the "varying advantageousness" of work) because of the unified contract. But even here not everything has worked out, people are in no hurry to use the coefficient of labor participation to clamp down on violations of labor discipline, and instead of fighting for the plan they vigorously demand improvements in the organization of production. It will not do to explain this result by the low level of conscientiousness of the workers or the unsatisfactory explanations of the advantages of the brigade form. A more likely explanation is that the organizers, not envisioning clear enough goals, were unable to create conditions for realizing the immense advantages of collective labor. But what are these conditions?

The first condition: To provide for a truly proprietary attitude toward the matter, a high level of creative activity and concern for a high final result. A unified contract is not enough here. If payment for the final results were not introduced, that is, if they had rates for individual operations that were not "dissolved" into the comprehensive norm for the completed project, then each member of the brigade would see individual rates and consider "his own" wages.

The second condition: In addition to granting the brigade everything necessary for its production, it must have a certain minimum of rights. The brigade leader, for example, must have the rights that the foreman had previously. The number of members of the brigade should be such that the brigade leader could see everyone literally without leaving his own work position. The evaluation of the labor of the brigade should not depend on how other subdivisions have worked.

It is possible to provide for these rights only by restructuring production management. Hence one can suggest the following formulation, with which my article began: the goal of introducing the BPOST is to create a qualitatively new system of production management whose lowest level would be the brigade--the primary labor collective.

#### The Starting Point of Production Relations

V. A. Lisichkin, Doctor of Economic Sciences, Professor; V. A. Moskvitin, Graduate Student at the All-Union Scientific Research Institute for Construction of Main Pipelines; and I. I. Mikava, Chief of the Mobile Mechanized Column

K. Marx discussed socialism as a "society based on the fundamentals of collectivism and common ownership of the means of production," [Footnote 1] where "the labor of an individual from the very beginning is public labor" [Footnote 2].

K. Marx went on to point out that "here (in a socialist society--author) there would exist a kind of labor organization which would have as a consequence the participation of the individual person in collective consumption." [Footnote 3] This, in our opinion, is a direct indication of the need to search for forms of organization and stimulation of labor that are adequate to socialism. Individual forms clearly do not meet this requirement. The BPOST and the collective contract at the higher organizational levels are a different matter. According to V. I. Lenin, the task consists in having each conscientious worker "feel that he is not only the master in his plant, but a representative of the country." [Footnote 4] From the brigade to collective labor on the scale of the state--such is the path toward realizing the predictions of the founders of scientific communism.

## Both Collectivism and the Final Result

Ye. A. Gavrilenko, Tomsk State University

Among the fundamental principles of BFOST are, first, collectivism and, on the basis of this, real participation of all workers in the management of production, from the brigade to the enterprise as a whole; second, the orientation of the collective toward the final result and a direct link between it and the wage fund.

Only with complete realization of both principles with the BFOST produce a sufficient effect. Unfortunately, in practice attention is focused on the latter principle, and the former is realized far from fully. Even in the local collective the collegial management agency, the brigade council, frequently acts formally, and all decisions are made either by the brigade leader or the foreman, and sometimes even the higher managers. For example, in one of the Tomsk Production Associations there were cases when data concerning wages of workers in the brigades were sent down from above, and the brigade leaders merely made the coefficients of labor participation equal to them. It has been necessary to deal with intervention from managers into purely intrabrigade issues (placement of workers, utilization of technical equipment, calculation of the coefficient of labor participation and so forth) under good pretexts at many industrial and agricultural enterprises of Tomsk Oblast. Not to mention the participation of workers in management at higher levels (shop, enterprise). We actually never found any workers on brigade councils. For example, at the electric light bulb plant the council operated under the deputy director for personnel and handled affairs of absentees. And when the foremen stopped submitting information about them, the council of brigade leaders promptly halted its existence. In the Sibkabel Association, even the general director himself played the role of the chairman of the Council of Brigade Leaders.

Because of the oblivion of the first of the aforementioned principles, initiative in the brigades is increasing slowly, and pressure from below on wages is almost not weakening. Moreover, in a number of cases it is increasing, for instead of individual self-seeking there is collective self-seeking. Recently managers of enterprises have been quite afraid of such a phenomenon as "brigade individualism": It is more difficult to withstand pressure from a brigade than from individuals.

As for the second principle, its role is clearly exaggerated. For some reason it is thought that the BFOST will produce a maximum effect if at the level of the brigade they take into account all resources expended on achieving the final result without exception, and then the brigades would be materially motivated to economize on all of them (these are considered the most developed and frequently are called cost accounting brigades). Of course, the expenditures of the most important material resources must be taken into account. But does this mean all of them, and will this produce the desired effect? After all, in order to do this one needs an immense number of additional gauges for electric energy, steam, heat, compressed air and so forth, as well as a significant rearrangement of intraplant communications. Incidentally, during a business trip to the Kaluga Turbine Plant in January

1984 I became convinced that at the level of the brigades they take into account only expenditures of live labor and metal, and the gauges for electric energy, compressed air and so forth remain in the shops. Nonetheless, few can keep up with workers of this plant when it comes to a proprietary attitude toward business. Obviously, if a worker were placed in the position of the owner not in words, but in deed, then he would take a proprietary attitude toward all resources and not just those for whose savings he receives additional remuneration.

At both enterprises where the BFOST is not developed, that is, where there are individual little brigades that are not joined into a unified complex, the reasons for low effectiveness are understandable and they have been written about repeatedly in the press. Well, what about places where the BFOST has already become the basic form and not "phony brigades" but real ones are widespread; why even there are the rates of increase and effective nets of production slowing down with time? Our research shows that a number of important parameters (material and technical supply, planning and management on which the activity of the enterprise depends remain beyond the reach of local labor collectives.

Therefore along with further development of the BFOST, which establishes collectivism, figuratively speaking, "from below," it is necessary to work actively to improve planning and management at the branch and national economic level, that is, the establishment of collectivism "from above."

**Self-Management and Development of the Sense of the Being the Owner** (Ye. P. Torkancvskiy, doctor of jurisprudence, professor, Institute of Economics of the Academy of Science, Moscow.

In my opinion, the main goal of introducing the BFOST and at the same time a condition for its high effectiveness is the development of socialist production self-management, which leads to instilling in members of the brigade a sense of being the master production. The concept "Master of Perfection is defined by man's admission in society as an owners, and is manifested in the possibility of his making management decisions. Management is the function of the owners of the implements and means of labor. Only the owner relates to production conditions as his own, and hence his interest not only in attaining material goods, but above all in retaining them, constantly expanding them and utilizing them as effectively as possible.

#### **Awakening the Potential That Lies in the People**

**A. Alipchenkov, Worker at KamAZ, Brezhnev.**

Many explanations are given for the low rates of increase in the effectiveness of public production, the shortage and so forth. These include the imperfection of planning and many other things. But at the basis of all these reasons, in my opinion, there is one root--the lack of the proper measure of independence for the workers.

Throughout the economy the manager thinks for the workers and all they have to do is carry out orders. The colossal creative energy of the masses remains

untapped. The BFOST, under the conditions of complete and universal cost accounting, is not only a means of speeding up the rates of economic growth, but also of awakening the potential that lies in the people. Having begun with small brigades, this method in the final analysis can unite all workers in a universal collective form of organization and stimulation of labor.

The BFOST is a signal for a radical breakthrough in production relations, a change in labor legislation, and a sharp reduction in size and cost of the administrative apparatus.

#### Brigades—Catalyzers for Change

I. V. Titarenko, Director of the Perm Telephone Plant

I agree with the idea that the brigade form should be the catalyst for changes in management as a whole. This by no way means that it should be regarded as a panacea. No, just as a catalyst.

The collective forms are not at fault; the problem is the shortages in supply. Thus on one day in January because of a lack of centralized service for work positions, of the 32 assembly brigades of our plant 10 failed to fulfill their daily shift assignments. The January plan was fulfilled by the assembly brigade by only 20 percent. The lack of diodes was the cause. But behind this cause there are deeper ones, mainly the fact that other units do not have the interest the brigades have in achieving the final result or the responsibility for fulfilling contractual commitments.

And this is the goal for which we are introducing the brigade form. If we do not achieve this and do not direct management toward the elimination of shortcomings, the brigades themselves will not be effective either.

#### Perhaps a Tactical Maneuver?

A. P. Sidorovich, Mining Master of the Kuybyshevskoye Mining Administration, Donetsk

One of the reasons for the weak effect from the dissemination of the BFOST is the inadequate theoretical base. Practical workers are forced to answer a mass of questions. Sometimes we are deceived. The Central Scientific Research and Experimental Institute of Coal, for example, in its publications allows in principle the possibility of the existence of the brigade form without the application of cost accounting as a method of organizing and paying for labor alone.

I consider it one of the most important theoretical mistakes to regard the BFOST as the system that completely corresponds to the economy of socialism. In my opinion, this is only a responsive reaction of the national economic organism to the difficulties it encountered during the 1970's and 1980's. This means that the BFOST is a temporary socioeconomic phenomenon, a flexible tactical maneuver. But it does not follow from this that we can do without scientific substantiation....

## In Plain Terms

R. Ya. Beresneva, Economist, Kharkov

In the recommendations of the USSR State Committee for Labor and Social Problems Concerning the Introduction of Brigade Cost Accounting Into Industry, there is this provision: the collective is guaranteed the appropriate wages with high quality performance of the volume of work stipulated by the agreement within the given time periods, regardless of the number of workers it takes" [Footnote 5]. One fails to understand the word "appropriate" in this phrase. In my opinion, it is there in order to "catch" the foremen and economists. For the inspector can interpret it as he wishes.

Let us say that there are people who are ill in the brigade and the output norms are strict. The workers would like to fulfill the assignment for those who are absent during overtime. But the overtime funds have been exhausted...

Within the limits of its own wage fund, the brigade would like to temporarily hire, say, some engineer. But nobody will permit this.

I have pointed out only three issues, but they are fundamental. Why not speak in plain words: does the brigade receive 100 percent of the planned wage fund? Why not permit a maximum overtime of up to 4 hours a day? Why not permit combining jobs at the enterprise by a decision of the brigade? Without a positive answer to these questions there can be no cost-accounting brigades.

Chairmen: —The writers have given several goals whose achievement can serve as an introduction to collective forms of organization and stimulation of labor. The goals are different, but the thing they have in common is that they are mainly social goals. If these are achieved, the necessary growth of economic indicators will also come. While supporting this approach in all ways, I would like, however, to warn against juxtaposing social goals against economic ones, as sometimes.

They should be combined. The method of combining them is to construct a tree of goals. The highest goal is the achievement and development of a collectivist awareness and behavior, and subordinate to this are the lower ranking goals—economic ones.

Let us recall the words of M. S. Gorbachev when speaking about the meeting of the aktiv of the Leningrad Party Organization on 17 May 1985: "We actually can obtain a high return if we put all organizational, economic and social reserves to work and at the same time activate the human factor first and foremost." Combining individual and public interests more closely, having overcome the centrifugal forces brought about by the predominance of individual forms of organization and stimulation of labor--this will put all reserves into operation, within the framework of collective forms of organization and stimulation. This is why brigades are created in the first place.

## Session 2

### The Framework for the Application of the Brigade Form

Chairmen: —After determining the goals for which the BFOST is introduced, it is necessary to establish the limits within which these forms are applicable. We will have to answer the following questions: first, do such limits really exist and, second, if they exist, what determines them? This is far from an idle question and it is not theoretical either. The editorial staff receives a considerable number of letters which express confusion: "Why are we forced to introduce brigades if they are not suitable for us?" Is it true that they are not suitable?

#### Our Coverage Is 100 Percent

A. P. Tsisin, Chief of the Planning and Economics Department of the Ufa Production Engine Construction Association

With the individual form each person knows his words. If you have fulfilled the normed assignment you have received your wage rate, piece-rate workings and a bonus. But for various reasons 10 percent of the personnel do not come to work. Individual workers are satisfied, but the section or shop does not fulfill the plan.

Brigades began to be introduced in the aluminum casting shop in 1977. Previously the shop had operated irregularly and turnover exceeded 25 percent. All the basic workers were joined into brigade-shifts, and the auxiliary and engineering and technical personnel engaged in service of production were joined into brigades to which service zones were assigned. Each production brigade received a plan for the month in norm/rubles of paid labor-intensiveness, and a degree of quality was set for the casting workers.

The sum of the plans of the brigades was equal to the plan of the shop. In other words, each work position was guaranteed to be informed of the entire shop plan through the brigade. Incentives were arranged correspondingly: the bonuses determined by the results of the work, both of the brigade and of each individual member of it. We immediately aimed for 100 percent inclusion. If only 50 percent of the workers were changed over to the brigade form, as was planned from above, then 50 percent would also have individual normed assignments that have nothing to do with the plan. And this is the same as retaining 100 percent individual piece-rate work. Therefore the brigade form must be applied to all workers at once.

Each brigade that services production and each bureau (group) receives a daily evaluation from the basic production. If the senior foreman or the foreman has signed the card for labor quality that is fine, but it will not do him much good if interruptions are noted on the card: the bonus will be decreased. Only the shop chief has the right to "remove" an interruption, but this has never happened—the penalty is irreversible. The card for labor quality must be filled out each day and submitted before 8 p.m. on the following day. If it is not submitted, a complaint is registered against the brigade or bureau (group).

Decisive steps have been taken to avoid leveling. Thus in places where the tariff system became bogged down, the difficulty of the labor was taken into account additionally. Conditions were developed for each brigade for determining the daily (weekly) coefficient of labor participation. The establishment of equally difficult norms was set forth as the most important condition for fairness of distribution. And certain successes have been achieved here.

The selection and training of leaders of collectives were included in various preparatory work. Practically all the young specialists, mainly casting engineers, electrician engineers and hydraulic experts went through the institute for assistants for foremen. Anyone who had worked as a foreman was soon promoted to senior foreman and was included in the reserve of shop chief deputies. The higher the quality of training, the greater the success of the brigades turned out to be.

During the first year the brigade form was in effect a large assignment was taken on--to increase labor productivity by 30 percent. It turned out that the brigade had significant reserves and the goal was reached. The source of the increase was organization and technical measures. During the second year the increase was less--13.5 percent, and technical measures accounted for one-third of this. But one must be aware of the background against which such a "small" increase took place! Moreover, one percentage point of increase in labor productivity "cost" 0.3 percent increase in wages.

At our enterprise the brigade is called the public department of personnel. And in fact labor discipline has improved sharply. In 5 years labor turnover has increased to one-fourth.

#### For Any Productions

E.F. Bassi and V. P. Skatin, Kirovskiy Zavod Production Association, Leningrad

As early as October 1981 the Association's cast iron shop introduced BFOST's that encompassed all services--both basic and auxiliary. Even during the first month labor productivity increased by 10 percent, and in 4 years--by 50 percent. Shock work disappeared. Two other casting and mechanical shops successfully followed the example of the cast iron shop.

Special attention should be given to the BFOST of the repair workers. The task of introducing brigades in auxiliary production is considered extremely difficult. But if one tries, this task can be achieved.

We developed the provisions concerning the BFOST for repair workers on the same basis as for brigades in the basic production. We considered two variants: including repair workers in brigades of basic workers and creating independent repair brigades. According to the first variant, the overall rating is formed from the sums of the brigade piece-rate per unit of output before the repair workers were included (mainly for watchmen) and the ratio between the sum of daily wage rates of repair workers and the daily planned volume of production of the comprehensive brigade.

According to the second variant, the workers were first specialized and specialized brigades were created: servicing of the shop's lifting and transportation equipment, equipment of the molding section, electricians and ventilation workers. These are independent structural units that bear full responsibility for the functioning of the equipment assigned to them. Thus we had the opportunity to organize wages according to the final result.

A number of members in the brigade is calculated according to the unified system for planned preventive maintenance and branch normatives. As the planned volume of production usually applied with the indirect piece-rate payment, we initially used the general shop volume of suitable commodity output in tons. In a year and a half, having studied many shortcomings, we rejected this. The general shop tonnage does not reflect the contribution of the repair workers. Beginning in 1982 their work was evaluated by the time of operation of the equipment in machine-hours for various productions this can be trouble-free functioning of equipment in set-, machine-, or furnace-hours, and so forth). We worked out variants of calculations that were suitable for any shop, using the simplest formulae, and we thus achieved universality of our system of paying repair brigades.

As a result, the repair workers received their plan for the first time—it was realistic, comprehensible and easy to monitor. Each brigade could calculate its earnings without difficulty, depending on the speed and quality of the service, as a result of which quality increased sharply. The introduction of the concrete indicator of "set-hour" gave the administration a clear means of managing the repair service. From the indicators of the latter one can also evaluate the work of the brigades in the basic production. For example, the brigade for repairing molding equipment fulfilled the plan by 101.5 percent, and the brigade of molding workers fulfilled it 100.9 percent. Obviously, the latter did not take full advantage of the equipment that was in good repair. Strict accounting for idle time makes it impossible to blame everything on repair personnel.

There is a total of 10 brigades and each has "its own" equipment and "its own" normative for down time in machine-hours. But the basic earnings are calculated for the time of trouble-free operation of the entire complex. Regardless of which brigade may be to blame for the down time of the shop, none of them is paid for the down time. Because of this there is solidarity and mutual advantage. But calculating the brigade bonus for the fulfillment of "its own" normative for down time precludes leveling or having some people work for others.

#### There Is No Limit to Development

I. F. Titarenko

We were among the first to approve the applicability of the VAZ method in our branch. And we have been successfully using the BFOST for more than a decade now. It covers 90 percent of the workers, both basic and auxiliary. There is a high effect. This can be seen from the example of the repair services which, as people frequently say, do not "submit well to brigadization."

During the past 10 years labor productivity of the repair workers has increased from 120 conventional units of repair per worker to 246, and wages have increased by 41.5 percent. The number of general repairmen has decreased by half, as compared to the normatives for the unified system of planned preventive repair. Down time of equipment during repair has also been cut in half, and the volume of nonplanned repair jobs and down time has decreased to one-fourth the previous amount. The overall amount of down time because of repair has stabilized in the plant in the amount of 2.54-2.6 of the scheduled time for operating equipment as compared to 4-5 percent according to the norms of the unified system for planned preventive repair.

#### The BFOST Is a Universal Instrument

Ye. P. Torkanovskiy

In my opinion, all the advantages of the BFOST--both social and economic--have as their source, as their initial cause, the self-managing nature of this kind of organization which transforms the brigade into a primary self-managed unit in the entire hierarchy of socialist management. In industry and construction, agriculture and transportation, the BFOST has its own specific peculiarities. But its essence, which determines the advantages of this type of organization, remains the same everywhere--a higher level of collectivist relations as a result of brigade self-management. Hence one thing follows: regardless of the branch of the national economy, the type or kind of production, the BFOST is universal and can be applied everywhere.

#### A Little More Flexibility

V. V. Belkin, Chelyabinsk Polytechnical Institute

Inflexible rules frequently impede correct determination of the applicability of the BFOST. Practical workers encounter a multitude of provisions concerning the BFOST which sound like dogma, although the concrete conditions require a creative approach. Here are some examples. "Of all the kinds of brigades," we read in one of the books, "the most progressive are comprehensive and all-encompassing ones" [Footnote 6]. In some places this is possibly true. But there are sections of unit and small-series production where the equipment is all of one type and there is only one occupation. The brigade can only be specialized since this way it will take best advantage of the costly equipment. One should not always strive to create all-encompassing brigades either. If one is not allowed to take concrete conditions into account, one should not be surprised to see people resorting to formalism and creating false "comprehensive" and "all-encompassing" brigades....

#### With an Orientation Toward the Final Result

E. K. Kadyrzhanov, director of the Electrical Equipment Plant, Alma-Ata

Practice shows that brigades can be created everywhere, especially if one determines the final result of their labor. We conducted the first large campaign for creating brigades at our plant in 1980. It joined 60 percent of

the piece-rate workers in the mechanics and assembly shops with this form. The brigades began to work under a unified contract and distribute the earnings according to the coefficient of labor participation. The results were promising: the rates of increase in labor productivity doubled as compared to past years. And the cause of all this was the lack of a real final result for the brigades in the mechanics' shops.

The final result of the labor of the assembly shop brigade coincided with the result of the enterprise's activity and so in mechanical production they were paid for the prepared parts. The brigade could produce "advantageous" parts but there was a shortage of "nonadvantageous" parts in assembly. Because of a tiny part worth a kopeck, the assembly section would fail to produce final products valued at thousands of rubles. Only a comprehensive brigade could help in this problem.

In 1983 a system of planning and payment for comprehensive brigades was put into effect at the plant. On the basis of the plant's plan for producing items and the number of days by which the manufacture of parts is ahead of schedule, a computer is used to calculate and issue a products list plan which points out the month and the quantity in which the brigade must manufacture a specific part. Along with the annual assignment for the products list, the brigade receives an operational products list plan each month (5 days before the beginning of the month). It is checked each day when the computer center issues the shift report of the section (SOU).

When the system was being developed it became clear that the number of parts that had to be manufactured according to the products list, because of their labor-intensiveness, exceeded the capabilities of certain brigades by a factor of 2 or 3. The plant drew up provisions concerning issuing a monthly plan for the products list taking into account the amount by which the manufacture of parts lagged behind the annual plan. The monthly products list plan for the brigades and shop was broken down according to the parts into three groups: those that had to be manufactured in order to make up for arrears from previous periods (schedule of "Arrears"), to fulfill the plant's plan for the current month ("Commodity"), and to provide for getting ahead ("Plan").

The capabilities of the brigade were established on the basis of the maximum level of fulfillment of the monthly plan in norm-hours achieved during the preceding half-year. The majority of brigades turned out to be capable of manufacturing parts according to the schedules ("Commodity") and "Plan" and also a certain number of positions from the schedule "Arrears." Since a nonadvance system of payment for labor is in effect at the plant, during the first half-month the mandatory products list is considered to be the parts plan for the month from the schedule "Commodity" and for the second half--"Plan" and "Arrears."

Before the comprehensive brigades were introduced a number of doubts were expressed. First, a part could be manufactured but not paid for. We quickly convinced the workers that the assembly workers have long been paid for the final result. Second, the brigade could be let down by supply. It is impossible to take such deviations into account. But it must be noted that while there were still shortcomings in material and technical supply the

shortage of parts for assembly decreased by a factor of 3.5 during the course of the year and the number of parts manufactured each month in the brigades increased 1.5-2-fold.

#### Matrix Brigades

M. S. Botshteyn, Engineer, GVTsLesbunpram, Moscow

The BFOST has been assimilated well for workers, which cannot be said of engineering and technical personnel. But there are brigades even of this category that are suitable, for instance, in our computer center. The difficulty with organizing labor here lies in the great indefiniteness of the content of the planned work and its result. The deviations that arise are corrected with the participation of higher managers, which is inexpedient. A solution can be seen in the utilization of the organizational structures of target program management.

A comprehensive brigade is created from specialists of various departments working on one project. It takes a contract for a complex of work for which funds required according to the normatives are allotted. As the program is fulfilled the composition of workers changes and the brigade disposes of all of the money available for wages and incentives. The director of the computer center is relieved of current and operational management of the program. A collective agency is created for developing and formulating strategic goals and ways of achieving them.

The most important conditions for highly effective labor of the brigade are free disposal of resources, including personnel, and earnings without a "ceiling."

#### Regulation of Organization for the Brigade

V. I. Sukovatov, and V. I. Miroshnikov, Engineers, KuzNIIShakhtostroy, Kemerovo

When the brigade form was introduced at reinforced concrete plants one could see many shortcomings related to the low level of technological preparation of production. Thus there were no clearly fixed work positions, no clearly established tempo and rhythm for the output of items, no assignment of technological operations to the work positions, and many other things were lacking. The task was to introduce complete division of labor among the members of the brigade through the forces of administration and not farm it out to the brigade.

KuzNIIShakhtostroy suggested and put into operation organizational-normative documents for projecting technological processes for the manufacture of reinforced concrete items. These were charts of three levels of standard technological operations: organization of the process of manufacture in the shop, the molding area and throughout the management system. The worker receives a chart for the operation and a sketch of the item, the foreman or brigade leader receives a chart of the organization of the process, and the managers and specialists receive a chart of the controlled system. The

economic effect from the utilization of technological charts at the Neryungrinskiy and Berezovskiy Plant amounted to 189,000 rubles in a year.

Chairmen: Frequently people write and speak about the "technical" and "economical" definition of the framework of the application of the BFOST. They say that brigades can be introduced only where this is required and allowed by technical equipment and technology, where an economic effect can be achieved. Participants in the conference, conversely, are showing that there are no limits to the application of BFOST nor should there be.

We know that brigades are widespread in industry, construction, transportation and other branches of the national economy. They have been created among Gosstrakh agents. These forms have proved themselves in mass and unit production, among basic and auxiliary workers, and among engineers and other specialists. The experience of the Kirovskiy Zavod Production Association is very attractive.

Having said "A," it is necessary to say "B." It is logical if some of the workers—50 or 70 percent—are working according to the laws of collectivism while the rest are working in any way they choose? It is true that there can be obstacles to the introduction of the BFOST that are of a technical or economic nature, but such obstacles should be eliminated. The contributors have given a number of examples to show how to solve such a problem in practice.

We shall assume that we have seen the most significant conclusions in favor of the existence of limits to the application of the BFOST. Such a conclusion will help us to be rid of allusions which are frequently made concerning the framework, the boundaries and impeding factors. Then it will be easier to introduce brigades.

### Session 3

#### Control of Continuous Development of Brigades

Chairmen: When thinking about the question of why the effect from extensive introduction of BFOST is so weak, one comes across one pattern: the brigades have been created, and that has been the end of it. Yet any work requires constant improvement and development—step by step, stage by stage. The old way, that is, individual forms of organization and stimulation, have become ingrained and they cannot be casually shrugged off. Here they are holding on, they are not giving up, and therefore the effect which could be achieved is not being achieved. The BFOST must be continuously and purposively developed and improved. What is standing in our way and what must be done in this direction?

#### The Effect From Preparatory Work

V. I. Balyura, G. G. Ivleva, R. G. Volkov and Ya. L. Eydelman

Poltava Elektromotor Plant, Vladimir Pedagogical Institute

The development of industrial production involves an orientation primarily toward the individual form of organization and stimulation of labor. The characteristics, peculiarities and customs of this form have become fairly firmly ingrained, so it does not make sense not to take them into account when changing over to the brigade form. In our opinion, today the changeover to the new form is taking place too rapidly.

They respond to us by saying, What are we waiting for? The brigades are producing an effect and so we must include everyone in them as quickly as possible. This, for example, is the situation at the Poltava Elektromotor Plant: the increase in labor productivity in the brigades amounted to 12.5 percent while with individual forms it was 3 percent. Personnel turnover in the brigades decreased by a factor of 2.3; the number of absences decreased by a factor of 3.7 while for the remaining workers these indicators remained the same. And so the people responding to us say, You recommend waiting with the introduction of brigades and failing to achieve this effect! But we must not forget to take into account the preparation that preceded the introduction of these brigades.

First, as early as 1982 it was necessary to set up the planning and accounting for the economic indicators in the cross-section of the brigades (for comparison, we used the output for one man-hour in norm-hours of stable labor-intensiveness). In this same cross-section it was necessary to work out the accounting for the losses from deductive work, the increase in the wage fund, labor turnover, violations of labor discipline and so forth. It turned out to be very complicated to determine the assignments for the brigades, and even today their passports include both the annual plan and the monthly assignments. They also include socialist commitments and commitments of the administration.

The development of variants of the system of wages for brigades began as early as 1980. The diversity of concrete conditions and opinions made it necessary to conduct socioeconomic and sociopsychological research as well as a mass of calculations. These calculations were intended, in particular, to convince the workers that they would not lose earnings when they changed over to the single contract (if, of course, they fulfilled the commitments they had accepted). Knowing the experience of others, it was necessary not to "cast" the customs of individual piece-rate work in collective forms.

In the brigades no small role is played by contact among their members. What would be the interrelations within the collectives and how many people would there be in brigades? The answers were provided by sociopsychological research conducted at the plant, as well as sociometric tests. Special attention was devoted to the attitude of foremen to the brigades. It was utterly impossible to do without explanatory work here.

We also took such measures as ensuring the possibility of joint recreation of workers in all-encompassing brigades. This was to have contributed to the solidarity of the collective.

The difficult preliminary preparation postponed the time of introduction of brigades, but it did not mean a failure to achieve an effect.

## Experience—The Father of Difficult Mistakes

I. F. Titarenko

As of today we know a good deal about the brigade form. We have determined, for example, the optimal sizes of brigades—in the zone of the shop section. We have clarified that for the development of self-management the chairman of the brigade council is any member except the foreman. The system for distributing the common earnings has been worked out fairly well. Nonetheless, we are still well aware of how much still needs to be learned, determined and corrected. It is quite obvious that not all of the possibilities revealed by the progressive form are being utilized fully.

We have almost completely forgotten about the competition for engineering support for the brigade form. And on the whole, the competition was not arranged convincingly enough. We have not yet solved in theory, for example, whether or not individual competition will remain in the brigade or not. True, in the branch it was thought it would remain, but not everyone agrees with this.

Today there are decisions to make about the introduction of foremen and other engineering and technical personnel into the brigade. Are we objectively prepared for this? For example, the operation and repair of electronic equipment can be entrusted only to engineers. And we have introduced them into the brigades. But methodologically, we have not yet "grown up." I imagine that it will be necessary to fiddle around with the problem of including engineering and technical personnel in collective forms. The experience that exists will undoubtedly be useful, but it is clearly inadequate.

Apparently we are not completely substantiated in approaching the creation of brigades if at the present moment far from all of them are cost accounting brigades, and the cost accounting in them is not complete, there is no reporting or incentives for economizing on material resources that are utilized. The plan, the products list and wages are traditional cost-accounting indicators of the brigades, but they must be significantly augmented.

The brigade of the transportation shop lost 107 man-days because of absences. Incidentally, quite recently this collective came out with an initiative to work without violations of labor discipline. And this is the finale. I do not think that this is anybody's oversight or miscalculation. It is simply that the brigades that we have introduced are not a natural organic means of improving discipline, and there is still a need to resort to campaigns.

Thus many years of experience convince us that we cannot stop when introducing the BFOST and continuous development is necessary.

## About the Holdup

B. A. Baklaykin, Chief of the Department for Organization of Labor and Wages of the Plant, Novosibirsk

We know a good deal about the merits of the BFOST. About the factors that impede their development and dissemination we know little. Here is what is observed at our plant. We have 97 percent of our workers in brigades, including 63 percent under a unified contract with the application of the coefficient of labor participation. The brigades, which consist of 10-14 time-rate workers, are constantly suggesting that the administration increase the volume of work with the same number of personnel and with payment for those who would ordinarily be added or to perform the same volume of work with payment for the people who are absent or have been released. Then the average earnings would increase by 8-9 percent and labor productivity, according to the normative net output--by 18-20 percent. The planners object to this or do not recommend it: when planning from the level of achieved the effect on the proposal returns like a boomerang to the plant in the form of changes in the plan for labor.

There is justification for misgivings of this kind. In 1983 the plan for increasing labor productivity was 5 percent and the actual amount achieved was 9 percent, and in 1984 the plan set for the plant was in the amount of 8.7 percent. Let us imagine that permission was given to act on the initiative of the workers. The plan for the first quarter of the year would have been filled by 11.3 percent, in comparison with the first quarter of last year--22 percent. If these indicators were used as a base for subsequent periods, the system would fall apart. This is why the administration is cautious about introducing brigades that work for the final result.

There is no doubt at all that planning should be arranged on stable normatives of payment per unit of output (work). Otherwise the current brigade form could not expand or develop.

## Certification of Subdivisions--The Path to Development of Brigades

V. I. Galochkin and V. V. Igayev, AvtoGAZ Production Association, Gorkiy

The association has 5,000 brigades which encompass 77 percent of the workers. These figures are high but at this point the "encompassing" cannot satisfy anybody and it is necessary to develop the brigade form and increase its effectiveness. In order to solve this problem, the sociological service in 13 productions and plants (200 brigades in 105 shops) conducted research on a wide range of problems involved with the new form of organization and stimulation of labor. The question was posed this way: How do we improve the quality of the BFOST?

Special reference materials and questionnaires of experts, foremen, brigade leaders and workers were developed for the investigation. The apparatus established an "ideal" schema for the brigade form, which was then "superimposed" on the actual condition. As a result, one could see a sharp divergence between what was expected by each percentage point of inclusion of

workers and the actual content. Many regarded this conclusion as unexpected and "unpleasant." Additionally, one could see a multitude of shortcomings standing on the path to improving the quality and increasing the effectiveness of the brigade form. They fell basically into three groups: the responsible organizers have a poor idea of its essence, significance in the technology of its introduction and development; the low level of activity of the line managers, services and department; and the incompleteness of decisions made concerning the brigade form.

In order to measure the effectiveness and even control the function of brigades, taking their evaluation into account, it is necessary to ask the following kinds of questions: How does one compare the quality of brigades in specific subdivisions; to what extent does the actual situation differ from what is necessary; what are the socioeconomic consequences of the existing condition and the paths to changing it, and so forth? In order to answer these it was necessary to develop methods that made it possible to determine the level of development of the basic elements of the brigade form in the various subdivisions, the effect of each element on labor productivity, the reserves that exist there, and the role and contribution of specific services. The methods were tested.

A program of immediate measures for improving control over the development of the BFOST, particularly periodic certification, was submitted to the management of the association. By an order of the general director, the provisions concerning certification of subdivisions of the association in terms of the level of development and the effectiveness of the BFOST were prepared and approved. They presented the goals, tasks, time intervals, criteria, methods and procedures of certification and the forms for gathering and processing information. The first certification was conducted in December 1984.

The evaluations from the results of the certification are as follows: "Brigade Certified," "Brigade Conditionally Certified," and "Brigade Not Certified." Shops and other subdivisions with a level of development of the brigade form of higher than 75 percent are given an evaluation of "excellent," from 51 to 75 percent—"good," and from 26 to 50 percent—"satisfactory." The comprehensive evaluation is expressed by an integral indicator of the development of the brigade form (IPB) which is equal to the sum of the products of each element of the brigade form multiplied by the coefficient of relative significance of the given element (K0Z). The K0Z is determined on the basis of a measurement of the connection between indicators of the elements and labor productivity in the corresponding brigades. In order to mention the connections that interest us we used a computer to calculate paired correlations of indicators for all elements of BFOST with the indicators of labor productivity of the collectives that were investigated.

Here are a couple of concrete conclusions that were drawn. In the metallurgical production, for example, according to the reports, 96 percent of the workers were included in the brigade form, the IPB was equal to 73.6 percent, and the certified brigades, that is, those in which all the tasks were being carried out comprehensively, included only 5 percent of the workers. As they say, this speaks for itself.

The responsibility for the development of the brigade form began to be distributed more correctly. Previously all problems were heaped on the chief of the labor service, and in general nobody took responsibility. Now one can go to a particular individual: for the integrated indicator--the line manager, for individual elements--the corresponding services. Concrete measures began to be developed more specifically, the process of development of the BFOST was included in socialist competition, and so forth.

Thus with skillful and correct utilization, information on the quality of the BFOST contributes to increasing its effectiveness in solving other problems.

#### The Contributions From Sociology

B. N. Artemyev, candidate of economic sciences, chief of the Department for Labor and Wages of the Chelyabinskii Traktornyy Zavod imeni V. I. Lenin Production Association

In 1981 the labor productivity of tractor builders not only did not increase but, on the contrary, decreased by 0.3 percent as compared to 1980, but earnings increased by 3.6 percent. In 1982 the tendency changed: for every 1 percent of increase in labor productivity, the increase in average earnings amounted to 0.6 percent, and in 1983--0.53 percent. The situation remained the same until the end of the five-year plan. How did they manage to achieve this change? It was noted that this change began when the proportion of workers included in collective forms of organization and stimulation of labor exceeded 50 percent (at the end of the five-year plan the degree of inclusion had reached 80 percent).

The fact that this factor had an effect is shown by the data of an investigation conducted by the Laboratory for Scientific Organization of Labor in 169 brigades. The rates of increasing advantage of the experience of the Kharkov Tractor Plant, in 1982 brigades were created from the workers of the supervisory staff. The results were fairly good. The controllers, who were permitted to spend up to 10 percent of the wage fund of those who were absent, began to devote more attention to preventing defective work.

The association is developing provisions concerning the creation of brigades of designers and technologists. The lack of satisfactory normatives for determining the number of personnel for given volumes of work, naturally make this work difficult, but it cannot stop it. It is known from experience that under the conditions of the association, one worker is released for every 30 brigade members. If engineering and technical personnel were included in the brigade form, even greater numbers could be expected to be released.

A number of measures have been conducted in order to develop and increase the effectiveness of the BFOST. Thus 1,250 brigade leaders have been trained. There is a 144-hour course with partial leave from production. Special emphasis was placed on sociological support, whose importance has been repeatedly confirmed. For example, the brigade leader V. A. Kapralov, who is in charge of one of the leading collectives, was surprised to learn that 10 percent of the workers consider his decisions to be unfair, although within

himself he had no idea that he was capable of such a thing. The sociologists helped the brigade leader to determine that the reason lay in the fact that he was not sufficiently informed about the distribution of earnings.

It is no accident that today brigade leaders are in favor of conducting sociological research and are ready to act on the recommendations that result from it. The chairman of the trade union committee of Shop No 2 for Automated Revolving Equipment, L. S. Shepelenko, told how uneasy they were about receiving sociologists, but then after the research had been conducted and the results analyzed, the management took concrete actions. More than 60 conversations were held with brigade leaders in branch plants. Guidelines for a number of shops and productions were prepared following recommendations from sociologists.

The first socialist competition produced appreciable results. The shops that had been investigated overfulfilled the plans for production and labor productivity. During 1 year the number of absentees decreased by 24.4 percent, losses of working time because of absences decreased by half, and labor turnover decreased by 9.3 percent. Only two brigades did not fulfill their plans.

The majority of managers of structural subdivisions and brigade leaders are firmly convinced once and for all that it is impossible to do without sociology when developing the BPOST. The deputy chairman of the association's council of brigade leaders, A. A. Rychikhin, said: "I filled out the questionnaire and waited to see what the sociologists would say. It seemed to me that I knew everything even without them. But their conclusions stunned me. That I am a person who can communicate, I work well with others, and I keep up with things. But I did not think that hidden behind all this was the fact that my demands are not very high and my contacts with the administration are poor. The conclusion is correct. I must change things." The brigade to which A. A. Rychikhin was sent was regarded as one of the most unfavorable ones. After only 9 months had passed, it was recognized as the best in the branch. The brigade leader had created the collective with the help of sociologists.

Recommendations from sociologists have become a permanent part of the daily life of the association. Since six specialists are clearly not enough for such a gigantic association, the party committee made a decision to create a laboratory for sociological research.

#### Through the Eyes of the Workers

A. A. Tkachenko, Candidate of Economic Sciences, Zaporozhye

In Zaporozhye sociologists of the production associations Preobrazovatel, Zaporozhtransformator, AvtoZAZ, Motorostroitel and others have conducted an investigation of the workers' attitude toward the brigade form. There are considerable advantages to brigades. As 98-99 percent of the products are accepted the first time, equipment and materials are utilized better, there are practically no violations of labor discipline, losses of working time are cut in half and labor turnover is reduced to one-fourth. The average annual

increase in labor productivity in comprehensive brigades amounts to almost 9 percent. But the results are still not fully satisfactory. What is the reason for this?

In the Zaporozhye Informator Association there are about 1,500 brigades that include up to 70 percent of all the workers. Questionnaires of up to 30 percent of the overall number of personnel showed that only half of the workers valued highly the advantages of the brigade form as compared to individual work. This is clearly not enough. The main reason was apparently that in the brigade the attitude toward labor becomes more responsible, which cannot be said about the management units. It is necessary to increase responsibility for the material and technical supply of the brigades, planning and accounting for labor.

Only 54.5 percent of the brigade members who were questioned proved to be active, thrifty masters of production; and they entered brigades at their own request, being deeply aware of the advantages of this form. They suggest ways of eliminating shortcomings and they themselves participate in the reorganization. But 11.7 percent of the workers answered that it makes no difference to them how they work—in a brigade or individually.

The reasons for the passivity of the brigade members are illustrated by sociologists: they are generated by the weak democratization of management of production. Every fifth one of the workers questions noted that the brigade councils were not elected but were appointed by the shop management. Moreover, more than 40 percent of the workers of the transformer and high voltage equipment plants stated that the administration does not pay enough attention to the opinion of the brigade. The number of conflicts is increasing.

Among those questioned 16 percent answered that the coefficient of labor participation improves the interrelations in the brigade, but at the same time another 16 percent of the workers assert that the relations have become more tense and confused; 7 percent of the respondents categorically blamed the coefficient of labor participation for all conflicts. In the opinion of 54.3 percent of those questioned, the coefficient of labor participation stimulates growth of occupational mastery and combination of occupations, but 13 percent pointed out the unsubstantiated norm setting for the labor of the brigades and the poorly arranged accounting for the personal contribution to the overall result.

What should one think of such a situation? If one is a pessimist, one might discuss the mass of shortcomings, and if one is an optimist one might discuss the great reserve. I wish to emphasize on the basis of research: one should be surprised that the results are fairly good. For in essence they have not managed to look before they leap. Explanatory work and persuasion are arranged unsatisfactorily. What results would be obtained with the elimination of these shortcomings!

Chairmen: The oblast coordination council for labor problems of the Council of the Novosibirsk CPSU Obkom for Scientific and Technical Progress has conducted research on the condition and development of BFOST at more than 50

enterprises of the oblast. During the analysis this peculiarity caught the eye: there were no entries concerning the development of brigades and elements of their functioning. How long should the composition of the brigade remain the same? Under what conditions should it be reformed or disbanded? How frequently should the apparatus for distributing earnings according to the coefficient of labor participation be changed? With what growth rates of production and social indicators should changes be made in the functioning of the brigade? Such questions are not taken into account. And if they are not raised in the plant "provisions," these documents will be directed not forward but backward, into the past and not the future.

In system analysis there is the assertion: the viable system is not the one that is strong today but the one that has prospects for development in the future. Rephrasing this one might say: the exemplary brigades are not the ones that are considered the best today, but the ones that are continuously developing and have capabilities of further development. Practice shows that inadequate effectiveness of the BFOST derives from a static approach to it. We have introduced brigades and let it go at that. But even this is a half-measure. In a new formation there are always many difficulties and even dangers. The waves of changes cannot but run throughout the entire organization of production, labor and management. Unfortunately, we frequently observe the effect of a stone that is thrown into the water. The surface ripples, running out in concentric circles, but soon it is smooth again. We need sharp and continuous waves of change, without which improvement is unthinkable.

The brigade has fallen apart.... With the usual approach this is considered to be a tragedy. Let us approach it, however, from different positions--continuous development. Then the breakdown of the brigade must be planned, having determined ahead of time the conditions under which this must happen.

The BFOST is a part of scientific organization of labor. Scientific organization of labor is defined as making continuous changes in the existing organization of labor. The approach to the BFOST should be oriented this way as well.

#### Session 4

##### Distribution of Brigade Earnings

Chairmen: A considerable proportion of the problems when conducting the BFOST are linked to distribution according to the coefficient of labor participation.

The coefficient of labor participation or KIU is without any doubt one of the most outstanding innovations in the organization of payment. But to what extent are the mechanisms for distributing the general earnings according to the coefficient of labor participation, which were developed mainly by practice, ready to play the serious social and economic role that has been assigned to them?...

## The Right To Select From Various Methods

A. A. Gorelskiy, Candidate of Economic Sciences, Docent, Tomsk State University

The first attempts to use the indicators known today as the "KTU" go back to the beginning of the 1930's. Up until the middle of the 1970's their application was episodic and did not go beyond the framework of experiments. Only in the last decade has the coefficient of labor participation acquired a significant sphere of application.

It has various names: creative activity and initiative (KATI), economic participation (KEU), effectiveness of labor (KET), quality of labor (KKT), individual labor productivity (KIPT), effectiveness and quality of labor (KEKT), and effectiveness of labor of workers (KER). As we can see, imagination has had full rein in the combination of words, but the content is almost the same for all of them. The coefficient of labor participation has basically two functions: to evaluate the contribution and to distribute earnings correspondingly in the brigade that is working under a unified contract.

In the calculation formulas, instead of the coefficient of labor participation, and sometimes along with it, they use the wage rate category and the category of work performed. It should be noted that the former shows only the potential capabilities of the worker but not their utilization. The wage rate of the piece-rate worker corresponds only to the minimum part of the wage that is guaranteed by the society. Payment for categories of work and not wage rates are used to establish piece rates. Thus brigade earnings are not distributed uniformly according to the rate categories of the workers since the ratio between the guaranteed parts is used instead of the actual complete earnings. Yet the methodological provisions are oriented toward the wage rate category of the workers. What this leads to can be seen from the following. For the foremen a salary is established which is one category higher than the wage rate of the workers that are under his jurisdiction. But the earnings of the workers are higher than their wage rates and therefore the foreman, as a rule, is paid less than they are.

The utilization of the coefficient of labor participation for distributing the entire brigade earnings does not stand in contradiction to the wage rate system, just as the individual piece rate does not contradict it. The wage rate system establishes the lower limit of earnings which must be maintained even when the BOST is introduced.

The coefficient of labor participation is more than just an instrument for objectively evaluating the labor contribution and the technology for the distribution of earnings. It is used to enlist workers in management and carry out a process of education. Previously education was thought to take place mainly with the emotions, an appeal to the sense of duty, but now one can influence people with economic reinforcement and changes in the actual earnings. If at the end of the month everyone ends up with good grades this means not only identical work on the part of everyone, but most frequently the fear of distributing the earnings fairly. Unfortunately, the coefficient of

labor participation is rarely used when summing up the results of intrabrigade competition.

Usually the structure of the coefficient of labor participation is formed from three parts: the base, the increasing and the decreasing values. The value of one is used for the base, the average hourly earnings during the past period (this is bad), the ratio between the volume of work performed during the shift and the normative amount in norm-hours. The amounts of fulfillment of output norms or the normed assignment can also be used. There are several shortcomings here. One is that when one observes the role according to which the sum of the coefficient should be equal to the number of workers. Incidentally, at the Kaluga Turbine Plant they have rejected this. The second is when the collectives receive from the higher-ups special adjustment scales for base coefficients and all they have to do is take into account the increasing and decreasing coefficients, that is, perform purely technical functions. The scales should be by way of recommendation and should play the role of criteria.

Considerable difficulties are encountered when justifying the role of each of the factors used in calculating the coefficient of labor participation. The usual method is the expert method. But there are also objective criteria. For example, in the strand-twisting section of the cable plant they use rates that are increased up to 10-30 percent for producing export products. Hence the coefficient of labor participation is increased by 0.1-0.3. With complete elimination of bonuses the total earnings would drop by 17 percent, and, consequently, the value of this factor is estimated at 0.17.

One of the most important principles for selecting the structure of the coefficient of labor participation is simplicity and comprehensibility to everyone. Frequently, however, one encounters this shortcoming: the evaluation is made according to only one factor--the individual productivity of the workers, which absolutely does not reflect the factors of collective labor, for example, mutual assistance. Consequently, the brigade does not influence the coefficient of labor participation; it only keeps track of the output, which in principle the administration should be doing. Such "simplistic," naturally, is not a step forward.

It should be emphasized that the structure of the coefficient of labor participation should be closely coordinated with the methods of calculating it. We did calculations of the coefficient of labor participation according to several methods for an all-encompassing comprehensive brigade on the basis of the division for twisting bare cable strands. These methods included using the rate category with an adjustment of the above-rate part using the coefficient of labor participation (standard); similar to it but instead of the wage rate category we used the category of work performed; the coefficient of labor participation is used for distributing all the earnings. The greatest interest arises when the selection is made among the three possibilities, for example at the Novokakhovskiy Electric Machine-Building Plant. Here two coefficients are used for distribution--for the basic earnings and for the bonus.

The selection of the methods is a creative process and formulaic work is not permissible here. The collective must be offered a range from which it can choose the most suitable. The brigade should also be granted the right to change the methods.

#### Proceeding From the Minimum

V. S. Fomin, Economist, Mogilev

Here is a concrete situation. The worker Sibirko was deprived of her annual bonus because she repeatedly failed to carry out the assignments entrusted to her. The fact that she did not fulfill the assignments was proved and it was admitted by Sibirko itself, but she claimed that withholding her bonus was illegal and demanded that it be paid to her, referring to the fact that nobody had ever been penalized for such violations before. True, such punishments had not been used previously.

Sibirko received her entire salary for each month even though she did not do her work. If you tried to take it away she would become indignant: nobody else has been deprived of any part of their salary, even though there are those who have worked no better than she has. If you do not want to pay her as much transfer her to a lower-paid position, and if you do not transfer her then pay the full amount. In the final analysis, it is possible to work poorly and without interest and it is not necessarily advantageous to work well: the salary is the same.

In this connection I suggest that salaries and wage rates for workers be established in the form of a mobile range with a minimum and maximum. Such ranges exist today, but the salary or wage rate in the categories are set for an individual worker for a long time. Say in the interval of 120-140 rubles they have set 140, and this figure remains. I suggest that the interval for a worker be 1 month. If he has earned 140 rubles in March then he should receive it. If he has not worked as hard in April, it should be reduced, and so forth. The workers will then have more interest in increasing their labor output. This would also eliminate the situation whereby not only the salary, but also the bonus has become mandatory.

#### Earnings According to Fairness

V. N. Zadorozhnyy, Doctor of Economic Sciences, Krasnokamensk, Chita Oblast

What is the coefficient of labor participation? Why does it frequently put people on their guard, especially in the first stage--during the organization of brigades? From the first day he comes to work every worker knows: the category and the bonus--this is what determines his material position. The coefficient of labor participation is something new, unusual and frightening. Only later is the individual convinced that this is an effective instrument for self-management of the brigades. But even this is not always the case.

In many brigades the coefficient of labor participation is determined at the end of the month according to the results. The council or meeting makes a decision on the basis of a report from the brigade leader, who during the

course of the month has kept track of reprimands or cases of extraordinary work. When recording the "blacklist" the brigade leader does not feel very comfortable. Everything in his notes is true but time has passed and the emotional evaluations of the shortcomings have been forgotten, but the brigade leader must remember them and suggest an evaluation for them in the coefficient of labor participation (after all, why not "let bygones be bygones?" The manager is actually set against the collective. Many hard feelings arise, and most frequently the "penalized" people become offended, especially when the punishment is given out loud. Do they know of our individual's retiring nature and his internal desire to "put things to rest." The especially "bold" ones speak out loudly, saying that "the brigade leader has punished them" for 20-30 rubles. Not the brigade, but the brigade leader, even though the decision is made by the brigade. My observations show that no more than 3 or 4 days will pass before the tension caused by this policy for forming the coefficient of labor participation abates. During this period of time the mood of the people causes the quality of the work to deteriorate. As a result, the brigade leader begins to give everyone a 1 for the coefficient of labor participation.

I see a solution in having the coefficient of labor participation established not by the brigade leader, but by the brigade council, and it should be done every day by determining the average arithmetic amount for the days worked in the month. They say that determining the coefficient of labor participation daily distributes part of what has not yet been earned (bonus, additional earnings), that is, counting their chickens before they hatch. But the bonus is not being distributed; rather the degree of daily labor contribution to the monthly final result is being determined. Answering other objections, I would say that for serious violations a coefficient of labor participation equal to 0 can be given for 3-5 days (with unauthorized absence--for the entire month).

Daily determination of the coefficient of labor participation requires additional expenditures of time, but this is only a couple of minutes for the brigade council at the end of the shift and literally 1-2 minutes for the brigade leader before the beginning of the next shift when he informs the workers of the council's decision for the preceding day. Thus the main goal is achieved. On-the-spot consideration in the collective both of the achievement of the leading worker and of the faults of the violator. Even a short delay in this work smooths over many details and weakens the evaluation and its influence. Daily determination of the coefficient of labor participation "removes" all arguments and dissatisfaction with the monthly determination which is carved by a psychological mistrust of the fairness.

Here is an important and psychologically delicate aspect: How does one change the coefficient of labor participation for calculation and not reduction of earnings so that the calculation of the earnings taking into account the coefficient of labor participation does not look like a "fine" for some and a greater bonus for others at the expense of the first? The provisions envision that the sum of all values of the coefficient of labor participation should be equal to the number of members of the brigade. And looking at the monthly information one focuses one's attention: they have "taken away" from one and "given more" to another. It is difficult to answer the "offended party" why with normal performance of his duties on the job and the conditions indicated

in the provisions concerning bonuses, the bonus is calculated in a smaller amount. It does not help much to explain that the "offended party" actually did work fairly well, but he only put in his required amount of time and in his own work position while his colleague, having fulfilled his own assignment, worked in a related specialty and made a great contribution to the overall result. He will reply that he agrees that someone deserves encouragement, but not at his expense!

In order to avoid all that, in my opinion, it would be expedient to differentiate the bonus as follows. Part of it, for example, 30 percent of the points, would be calculated for the results of the worker's personal labor. Another part, also 30 percentage points, would be calculated for the results of the work of the brigade, depending on the quantity, quality, rhythm, and comprehensiveness of the products that are produced, the culture of production and so forth. In other words, one part of the bonus is for "my" work, and another part is for "our" work, for the final result of the labor of the brigade. The latter ("our" bonus, it seems to me, should also be distributed taking into account the coefficient of labor participation. And, of course, it is necessary to take the coefficient of labor participation into account when distributing all of the additional earnings of the brigade and the bonus for economizing on material resources, energy and so forth.

#### Wages Instead of a "Pension"

L. K. Osadchiy, Berezan, Kiev Oblast

The system of incentives for specialists and managers today reminds one more than anything of the system of social security, and wages--a pension. Regardless of how you work you still receive a salary. Has anyone anywhere seen a case where engineering and technical personnel have because of their earnings felt their guilt for holding up scientific and technical progress, formalism in the organization of competition, or weak BFOST? I have never seen this in my entire labor life.

I suggest a different system. Let us pay not for positions and titles, as is the case today, but for the final result, that is, for the performance of their duties--8-12 points. Everyone knows their duties ahead of time, just as they know the ratings for them. If they have performed all of them they will receive several salaries (for minimum one can use a single salary of 70 rubles) and if they have performed only part of them, their earnings will be less--for a minimum they would receive 70 rubles.

Our society guarantees certain things to every worker under the constitution. But in fact it is sometimes a "pension" that is guaranteed. It is necessary to escape from this inconsistency.

#### The Coefficient of Labor Participation According to the Questionnaire

A. F. Omelchenko. In the methodological fundamentals of the BFOST, developed by the Scientific Research Institute of Labor, it is recommended that the coefficient of labor participation be used by a decision of a general meeting of the brigade. It seems doubtful to me that it is expedient to resolve such

important and touchy issues as evaluation of labor by open voting. Therefore I suggest secret questionnaires which guarantee a normal psychological microclimate in the collective and independence and freedom of the experts.

The questionnaire contains the surnames of everyone, including the expert himself for self-evaluation. The experts evaluate the labor participation of the worker with the help of a scale (5--excellent, 4--good, 3--satisfactory, 2--poor). If an expert has evaluated somebody at 4 or below, he indicates on the questionnaire why he has given this evaluation: for an inadequate quantity of individual labor, inadequate quality of this labor, or a negative influence on the labor output of others (which is frequently the case, even with good indicators of individual labor). The quantitative evaluation of labor participation and the reason for its reduction is indicated with a + sign. With a soft pencil in the corresponding columns of the questionnaire so as to prevent identifying the evaluation from the handwriting, and this makes it possible to utilize the questionnaires repeatedly. Self-evaluation most frequently produces increased results. Therefore a psychological barrier is placed against reducing the evaluation of the labor of others: the highest and the lowest unit evaluations are discarded.

On the basis of the information obtained with the questionnaire one establishes the final result--the average monthly evaluation of the labor participation of each worker. The coefficient of labor participation of the specific member of the brigade is calculated as the ratio between the evaluation he has received from the collective and the average value of these same evaluations in the collective. It is clear that the average worker has a coefficient of labor participation equal to 1, those with higher than the average level--more, and lower than average--less than 1.

The transformation of the "point" evaluation into the coefficient of labor participation precludes the influence of the scale itself on the objectivity of the final result and the inevitably subjective understanding of each expert concerning the standards of work (excellent, good, satisfactory and so forth) on the basis of which the evaluation is made. The important thing now is for each of them, through comparison to correctly rank the labor participation of the members of the brigade. But it is precisely this that provides the natural mechanism for evaluation which is inherent in the individual.

The proposed policy for establishing the coefficient of labor participation guarantees the required average value of it for the brigade, which is equal to 1 with any level of independent partial evaluations of experts for the individual worker.

We experimentally utilized the methods presented here in brigades of the construction combine of the Kievzhelezobeton Association and in Store No 21 of the Kiev firm Obuv. It was revealed that the coefficients of labor participation obtained by the proposed method have a smaller amplitude (extremes) than do the coefficients established by the existing method (at a general meeting, by the brigade council). But only the new methods make it possible to obtain strictly differentiated results--practically every worker receives his own coefficient of labor participation, which is different from the others.

If the worker is evaluated by the manager himself or even a group of people (the brigade council or the people who speak at a meeting), the bad worker always has the saving thought that the majority do not think badly of him. But here the opinion of all is revealed each time. Under these conditions it is impossible not to submit to the evaluation and it is necessary to do what the collective expects from an individual.

This conclusion was confirmed by the results of the experiment. Thus in the brigades at the construction combine there were workers with a low labor output and production discipline. They practically did not react to the reprimands of the brigade leader, the foreman or the shop chief. They did not exert the proper influence or participation in discussion in the collective. And it was only the evaluations of these workers that were obtained by the proposed method that caused them to change. Two of the worst workers in the brigade of 37 were fired.

The proposed methods are simple and they are not labor-intensive. The entire collective understood them immediately. The process of distributing questionnaires in one brigade takes 3-5 minutes, and processing the results--0.5 to 3 hours, depending on the number of members.

#### And We Have--Balance Commissions of Brigades

V. Danilov, Engineer at KamAZ, Brezhnev

We have applied the coefficient of labor participation in practice and obtained a good result when the evaluation was provided by the so-called balance commissions of brigades. Such a commission consists of permanent members (they give evaluations to everyone) and temporary ones, who change regularly (they evaluate those with whom they have direct contact). Our approach is recommended especially for territorially separated, large, comprehensive and all-encompassing brigades.

#### All Earnings According to the Coefficient of Labor Participation

V. V. Belkin

Until recently, official materials recommended that the coefficient of labor participation be used to distribute only the part of the brigade's earnings that is above the wage rate--additional earnings and bonus or bonus alone. They explain this by the fact that there are possible cases in which the brigade fulfills the plan, but an individual worker from it does not receive his earnings even when he has fulfilled his output norm. They are also afraid of weakening the role of the wage rate categories. These justifications are fairly weak. Let us say that a brigade has neither additional earnings nor a bonus. What will be distributed according to the coefficient of labor participation? Yet even in these conditions the collective has leading workers and backward ones. In order for all of them not to be equal with the worst, it is necessary to distribute earnings, including the part that comes under the wage rate.

If a brigade has both additional earnings and a bonus, but someone has not fulfilled the output norm, his wage rate earnings are paid completely at the expense of his comrades. On the whole it is more rational to distribute all of the general brigade earnings according to the coefficient of labor participation. This is a more flexible approach.

The following ranges of values of the coefficient of labor participation are recommended in the official documents: 0-2 (when distributing the bonus) and 0.5-1.5 (additional earnings and bonus). When distributing the earnings as a whole, many authors recommend an interval of from 0.8 to 1.2. Obviously this framework is too rigid. Let us say that before entering a brigade one welder earned an average of 450 rubles a month and another--150 rubles, the difference having a factor of 3. But the last interval provides a difference with a factor of only 1.5. Clearly, a highly qualified worker will not enter this brigade. And people ask the question: "Where does one get such a coefficient of labor participation!" In order to respond to this one must refrain from rigid intervals and take into account concrete conditions and differences in the contributions of the brigade members.

To sum up, I wish to say that the provisions concerning the BFOST should undoubtedly contain "iron" rules that are mandatory for all, but a good deal must be left for the decision of the collective itself, who know and are capable of much. Otherwise, confidence in brigade forms will be undermined.

#### Indicators of the Brigade and the Brigade Leader

V. M. Boykov, Scientific Research Institute of Economics and Planning of Heavy and Transport Machine Building, Sverdlovsk

How does one determine the indicators of the work of the brigade and the brigade leader? In order to prepare methodological recommendations regarding this issue, our institute conducted research at the Novokramatorsk Machine-Building Plant, Uralmash, Elektrostal'tyazhmash and other branch enterprises.

From the results of the research, the following indicators characterize most completely the effectiveness of the production activity of the brigades: the volume of production in physical terms (in norm-hours), labor productivity, the wage fund, and the quality of labor of the brigade. Hence the sum of the collective bonus is determined by multiplying the planned wage fund by the percentage of the bonus for the achieved level of fulfillment of the planned assignment, the same thing for labor productivity and also the coefficient of the labor quality of the brigade. Here is the formula:

$$P = WF \times (Ppl \times Ppr)/100 \times Kqlb$$

The coefficient of the quality of the brigade's labor (Kqlb) is the generalizing evaluation indicator of the qualitative aspect of the collective's production activity. It reflects the achieved level of rates of products at the first presentation, the level of culture of production, the utilization of instruments, raw materials, processed materials and energy, the maintenance of equipment, labor and technological discipline, observance of the rules for technical safety, production sanitation and fire protection.

$$Kqlb = 1 - (n/\eta) \sum_{i=1}^n C_i N_i$$

where  $C_i$ --established normative of reduction of the  $Kqlb$  for each case of deviation in terms of  $i$  factor;  $N_i$ --the number of deviations in terms of  $i$  factor.

The result of the research normatives for bonuses for brigades were developed (see Table 1).

Table 1—Normatives for Bonuses for Brigades According to Results of Their Work

Indicators	Less than 100%	Scale of Bonuses		
		100%	From 100% to 105%	105% and Higher
Fulfillment of plan for productive volume	Bonus not paid	30%	1% for every percentage point of over-fulfillment	0.5% for every percentage point of over-fulfillment
Level of labor productivity	-2% for every percentage point of over-fulfillment	0%	2% for every percentage point of increase	2% for every percentage point of increase

Analysis has shown the ineffectiveness of stimulating the labor of the brigade leader when he receives as a piece-rate worker an additional payment of 10-15 percent of his wage rate earnings. He does not have enough interest in the final results of the work of the collective. Therefore, we suggested this formula for calculating additional increments (within 2 percent of the wage fund) for the brigade leader:

$$Z = Z_u \times P_r \times Kqlb$$

where  $Z_u$ --the sum of earnings of the brigade leader for a performance of management functions,  $P_r$ --labor productivity as compared to plant.  $Z_u$  is determined by multiplying the wages of the brigade leader taking into account his coefficient of labor participation and the time worked in the given month and the coefficient of employment of the brigade leader by the equation ( $K_z$ ).

Selective time and motion studies in the leading shops of the basic production of machine building enterprises in the branch made it possible to determine the time the brigade leaders spend on performing work for managing the collectives. Then, using methods of correlation-regression analysis, we determined the normative coefficients of engagement in management (see Table 2).

Table 2--Normative Coefficients of Employment of Brigade Leaders  
in Administration in Brigade (Kz)

<u>Number of Workers in Brigade</u>	<u>For Compre- hensive Brigades</u>	<u>For Specialized Brigades</u>
16-20	0.196	0.150
21-25	0.243	0.184
26-30	0.284	0.219
31-35	0.328	0.254
36-40	0.372	0.295

Chairmen: The mechanisms applied for determining the earnings of the brigade according to the coefficient of labor participation bring down an avalanche of questions. This avalanche literally sweeps away scientific principles, and sometimes both logic and common sense as well. Only empirical findings stand up under its pressure. Science uses these in practice. It grasps onto them firmly, forgetting that empirically discovered mechanisms are frequently erroneous or have a limited sphere of application. Participants in the present discussion have reported their findings. They can be used after attentively studying the applicability of any approach to the conditions of concrete production.

#### Session 5

##### Including Specialists and Managers in Brigades

Chairmen: In decrees concerning further development and increased effectiveness of the BFOST adopted at the end of 1983 it is recommended that, where expedient, foremen and other engineering and technical personnel be included in brigades so as to motivate them to help the brigades work more effectively. Life has required this approach. But there immediately arose a mass of questions: Who will be included in brigades, how will the spheres of influence of the brigade leader and the foreman be distinguished, how will earnings be divided up? The answers to these questions will be provided by participants in our correspondence conference.

##### The Foreman-Brigade Leader or the Foreman and Brigade Leader?

V. V. Bronshteyn, candidate of economic sciences, chief of the socioeconomics laboratory; V. G. Grebennik, deputy director for economic issues, Irkutsk Plant for Radios imeni 50-Letiye SSSR.

The BFOST has made serious changes in the structures of management. A specific management figure has appeared--the brigade leader. When a new participant appears in the system, naturally, the status and functions of the others must also change--the foremen and other line managers. But how will they change? This question is usually answered late, while the brigade form is already being introduced, although it would make more sense to straighten it out beforehand. This same thing happened at our plant. Therefore there was nothing left for us to do but to study the facts.

We questioned all shop chiefs, half of the foremen and brigade leaders and 10 percent of the workers. Do they think about the interrelations between the foremen and the recently appearing chiefs—the brigade leaders?

Two-fifths of the brigade leaders were not completely satisfied with these interrelations, and every fifth one perceived tension. Three out of 10 workers note that there is no unanimity and that the foremen and brigade leaders give contradictory instruction; only 46 percent of the brigade leaders indicate that all the instructions to members of the brigade come from them, and more than half the brigade leaders say that instructions to the workers are also given by shift foremen and section chiefs and hence the confusion, and in 48 percent of the brigades the foremen do not participate in the distribution of earnings among members of the collective.

As a result, every fourth foreman speaks about their own difficulties in interrelations with brigade leaders.

Practice frequently suggests combining the two roles. This is a situation at VAZ, the Perm Telephone Plant, and the Elektrosignal Plant in Novosibirsk. Large brigade-sections are headed by the foreman, and he is also the brigade leader. But it would be wrong to be too hasty in extending this practice too far because the concrete conditions differ at various enterprises. Nor can one fail to take into account the differences in the functions of the two categories of workers.

According to our data, brigade leaders spend 18 minutes a day on "external" concerns, or 3.8 percent of the shift time while foremen spend more than 3.5 hours, which is close to half of the normal working day. When the VAZ method of management is introduced, the line managers are responsible for coordinating the activity of the centralized services. During the past 5 years, according to data from time and motion studies of the work day, time expenditures of foremen and shop chiefs on interacting with representatives of functional services increased by a factor of almost 1.5. This is hardly the place to involve brigade leaders.

The lower the level of series production, the more time the foremen have to spend on the section's external ties. It is not surprising that at VAZ and the PIZ they deal without brigade leaders. Highly skilled foremen devote 1.7 times more time to improving the organization of production than the rest of them do, and foremen who work without brigade leaders or do not have the support of brigade leaders devote half as much time as their colleagues who value highly the assistance of their brigade leaders (5 and 11 percent, respectively). With individual labor a new foreman must be trained for 6-8 months; under the brigade conditions this is cut by a factor of 3-4.

On the whole our questionnaires show that it would be expedient to retain the institution of brigade leaders. But who should be ultimately in charge? We have assumed that the foreman would spend 100 percent of his time in management and the brigade leader—30-35 percent. This means that a brigade leader who has worked 3 times longer than a foreman and has a higher level of education has more experience in management and higher business qualities. Thus he is also better suited to be the one who is ultimately in charge.

Having used the method of group evaluation of the personality of the manager and collections of situations in social psychological, labor legislation and economics, we found that the business qualities of the brigade leaders are better than those of the foremen in 28 percent of the cases. It is clear who would actually assume the role of the top manager of a large brigade. The foreman should be subordinate to such a brigade leader not only in practice, but also officially.

At the plant they are developing provisions concerning changes in the structures because of the introduction of large (combined) brigades, brigade-teams that include foremen and other engineering and technical personnel as part of the brigades, and so forth. There are many questions here that still have to be answered.

#### Here We Are Prepared To Do Without Foremen

V. V. Ulanov

Experience shows that workers are willing and able to take over management in brigades. The brigade leaders of our plant—A. M. Tarasov, N. V. Barabanov, D. I. Ivanov and others—in spite of the fact that the organization of their brigade work zones is quite far from ideal, bravely take on many functions of the foremen (not legally, but in practice) and the interesting thing is that frequently they perform these functions better than the foremen do. They state this directly: make our production more closed and make the repair workers take care of their obligations better, and we will do without the foremen completely.

At the Ryazan Combine Plant we saw a shop where there were completely autonomous brigades comprising 15-17 individuals. Each of them manufactures several dozen kinds of parts from beginning to end. One manufactures rollers, another--sprockets, a third--pistons, and so forth, all the necessary equipment for each brigade is gathered in one place--next to the lathe you will see the welding area and the furnace.

Shop chief, Vartan Lazarevich Iretsiyan, said quite seriously that he has practically no need of foremen. He has already eliminated half of them, and the rest of them are still there for the time being. They need somebody to take responsibility for technical safety, but two shift chiefs would be enough for this. We can believe this: we spoke with Vartan Lazarevich a couple of times in his office for about an hour and a half, and we heard no telephones and saw no frenzied foremen. In response to my question, the shop chief himself answered with a smile that he is now the freest person in the shop, that his brigade leaders manage all of the production.

I was impressed by the business qualities of these brigade leaders, their awareness of their own importance, and their feeling of being a master in production. This is manifested in literally everything: in their calm, intelligent judgments regarding questions of organization and payment for labor, in their knowledge of the course of production in the section, in their relations with their comrades in the brigade and with the administration, and in the self-esteem with which they speak with you.

We can see no sign of immediately eliminating the foremen and placing their functions on the shoulders of the workers. This has to be done very cautiously, as the necessary production conditions are created and the workers themselves become aware of their new capabilities. Apparently the administration will also need a considerable amount of time to learn to delegate to the workers some of the functions for managing production. But this goal should be set even now, for otherwise we are losing time and not utilizing the immense advantages provided by the BFOST.

#### Engineering and Technical Personnel in the Brigade

V. V. Khlevetskiy, Department Chief, and V. G. Shulzhenko, Candidate of Economic Sciences, Sector Chief, Western Siberian Branch of the Scientific Research Institute of Labor, Novosibirsk

Today foremen and other engineering and technical personnel are being included in brigades. This gives rise to a multitude of questions whose answers can be obtained from the experience of the Elektrosignal Plant. Since 1970 brigades have been operating here in the zone of the production section, which includes all workers, foremen, senior foremen and technologists.

The experience has brought much that is instructive. The labor of the foreman is better specialized. He controls production and organizes it, so that now highly qualified workers are not taken away to do this. Technologists have begun to respond more promptly to questions raised by the workers and they themselves engage more actively in searching for ways of reducing expenditures of working time. They test their own developments, and for especially complicated technologies they train workers until they master the process correctly and well, the training is better than it is when conducted by foremen or brigade leader-workers.

The quality of the technologies that are developed has improved sharply. The time periods for development, assimilation and making changes have decreased, and the economic effectiveness of technical processes has increased. As the workers themselves say, things have become calmer for them because they can obtain help from a foreman or technologist at any moment.

They have also retained those advantages that are provided by the ordinary brigade form: management through the councils of brigades, expanded combination of occupations and positions. For example, the automated machine operators have mastered some of the adjustment work, the adjusters are manufacturing products, and the controllers are performing auxiliary work. All the basic workers in the galvanizing shop now know from three to 10 operations each. Even the laboratory assistants and workers in charge of the vats replace the galvanizers or etchers. In the frame-stamp shop, 25 percent of the members of the brigade-sections have mastered three operations.

The results of the work of 27 new brigades that include engineering and technical personnel speak eloquently: during the first year, labor productivity increased in them by an average of 14.7 percent, while during the preceding year it increased by 2.8 percent. During the next year, it

increased by 13.9 percent. As a rule, indicators of the brigade-sections are higher than they are for the shops which do not include them.

An essential increase in earnings has not led to a violation of the ratio of the growth rates of wages and labor productivity. For the foremen the average amount of the above-salary part has amounted to 60-70 percent, which is twice as much as the average for the plant, and for technologists it is about 50 percent, which is also twice as much as the plant average. These figures are analogous for time rate workers. There are marked improvements in social indicators--labor discipline and labor turnover.

#### How to Encourage the Engineer's Performance

A. B. Platakis, Furniture Factory Director, Panevezhis

The existing possibilities of maneuvering with wages, additional payments and increments within the range of 1 percent of the wage fund, moral incentives and the organization of socialist competition--all of this is not producing the necessary effect yet. Even under the conditions of the large-scale experiment, as far as I know, encouraging creativity does not always produce an effect. Without denying the role of the aforementioned factors, one should continue to search for other possibilities of awakening the creative forces of the workers.

People usually direct their gazes toward bonuses. But we are well aware that bonuses do not do enough in this area. An engineer or manager has quarterly bonuses that reach 50 percent of their salary. They are paid for the fulfillment of production indicators and certain conditions. The latter most frequently include the observance of labor discipline, but, understandably, creativity cannot be measured by whether an engineering and technical worker has come to work on time or has been a quarter of an hour late.

Because of what has been said, I suggest the following. The quarterly bonus is broken down into two halves. The first one is paid for the fulfillment of production indicators, regardless of the degree of performance of the workers. More precisely, it would be for performance of official duties. The second half of the bonus would be distributed depending on the actual contribution. It would be received by those who have displayed innovative work, inventiveness, initiative and enterprising.

An official document would be introduced for this kind of distribution--the certificate of creative participation. The formulation of the results of the periodic certification should be brief and clear. It would be based on previously established descriptions of the elements of creativity for each specialty and each work position. A decisive role in the evaluation would be played directly by the manager. The bureau chief would do this for the engineers; the division chief for the bureau chief; the head specialists, head engineer and deputy director--for the chiefs of divisions, services and subdivisions; the director--for his deputies and the head engineer; and the general director--for the director.

People say that with such an evaluation there is a great probability of subjectivism. But I know from experience that such a subjective evaluation most frequently turns out to be both correct and objective. I would never agree that one could limit oneself to a purely formal approach, using points.

I emphasize: there should be no question of any additional bonuses for performance. I am simply suggesting that the already existing bonuses be distributed according to the creative contribution. Above I "bit off" half of the quarterly bonus. But I think that the other half could also be distributed on the same basis.

#### We Evaluate the Activity of Engineering and Technical Personnel

M. B. Sadriyev, Director of the Shkapov Gas Processing Plant, Bashkir ASSR

Our plant has only 350 workers. With this number, on the one hand, the tasks of management are facilitated, but, on the other, a multitude of additional difficulties arise. For example, questions of organization, norm setting and payment for labor are entrusted to one worker. There are no capital construction or administrative-management services at all. Under these conditions the actual activity of engineering and technical personnel is manifested more clearly than it is at a large enterprise. It is necessary to take into account that the volume of correspondence and reporting is steadily increasing. How do we cope with this? Here is where the attitude of each individual is revealed.

It has been noted that engineering and technical personnel take different approaches to the performance of their duties and display various kinds of interest in the results of the plant's activity, yet the bonuses are distributed the same to all of them. It is no surprise that it has become an addition to the salary and is guaranteed with the fulfillment of certain conditions, just as the salary is. We decided to introduce differentiation. For this purpose we developed a coefficient of labor activity (similar to the coefficient of labor participation)--KTA. It is intended to play the role of evaluating the labor of specialists and managers when bonuses are distributed.

To the base coefficient of 1.0 one can add certain points: for displaying initiative and independence in solving production problems, for taking measures to improve product quality, for successfully carrying out additional assignments of the plant management, and so forth. Various shortcomings cause points to be subtracted. When the value of the KTA is higher than 1.0 the worker's labor is rated as "excellent," from 0.9 to 1.0--"good," for 0.5-0.89--"satisfactory," and 0.59 and lower--"unsatisfactory." The bonuses are distributed accordingly. A special journal is kept to keep track of the KTA according to its deviations (achievements and shortcomings).

Even the first months of the application of the KTA have produced appreciable positive results which have made it possible to improve the activity of the plant's entire collective.

## Paying Engineering and Technical Personnel From the Brigade Fund

Ye. L. Losadskov, Western Siberian Branch of the Scientific Research Institute of Labor, Novosibirsk

The basic provisions concerning bonuses for workers of production associations (combines) and enterprises in industry for the basic results of the economic activity, which have been approved by the USSR State Committee for Labor and Social Problems and the Secretariat of the AUCCTU, firmly determine that bonuses should be given to engineering and technical personnel only from the material incentive fund. When engineering and technical personnel are included in the brigade, this rule is not observed: some of the earnings of the engineering and technical personnel come from the brigade's wage fund.

We understand certain of the points of K. Marx in the sense that the labor of both workers and engineering and technical personnel is used to create the entire product and not only some certain part of it, and the earnings of the "total worker" (and all the constituent parts according to their labor contribution) are, correspondingly, the earnings calculated for the entire created product and not just the bonus part. Therefore it is quite justified to pay engineering and technical personnel from the brigade's wage fund.

But how does one compare the activity of basic workers, auxiliary workers and engineering and technical personnel: after all, they perform different functions and the nature of their work is different. But it is quite possible to compare the attitude toward labor, initiative, and the condition of labor and production discipline. One can also compare the qualifications of various members of the brigade or, more precisely, the actual qualifications of each worker with the requirements placed on him by his specialty. In other words, one can determine if he is "a good foreman," "a good technologist," "a good lathe operator," and so forth.

The aspects of the activity according to which the labor of a worker is evaluated should be the same for all members of the brigade. But their value when evaluating labor are not the same: for a technologist, for example, creative activity is more significant while for ordinary workers its level is not so essential, and so forth.

In order to compare the significance of various criteria when evaluating the labor of various categories of personnel, one can use the method of paired comparison. Using the method of paired comparison, we obtained the following values for four categories of members of the brigade—basic workers, auxiliary workers, foremen and technologists (see Table 3).

Table 3—Values of Criteria of Quality of Work

<u>Criteria of Quality of Work</u>	Categories of Brigade Members			
	Basic Worker	Auxiliary Worker	Foreman	Technologist
Qualifications (sum of knowledge and abilities in specialty)	0.31	0.31	0.31	0.28
Intensiveness of labor	0.17	0.14	0.22	0.11
Efficiency, enthusiasm	0.17	0.22	0.14	0.14
Creative activity	0.03	0.03	0.03	0.25
Observance of labor and production discipline	0.24	0.22	0.16	0.19
Relations with comrades	0.08	0.08	0.14	0.03

The overall evaluation of the worker's activity will be determined by the sum of the products of the points obtained for each criterion (on a five-point scale) and the significance of the criteria for the corresponding category of brigade members.

The coefficient of labor participation is calculated by dividing the overall evaluation obtained by the worker by the average general evaluation for the brigade.

#### Planning and the Brigade

A. M. Soldatov, Chief of the Division for Labor and Wages of the Mine Administration imeni Artem of the Primorskugol Production Association, honored worker of culture of the RSFSR, Artem.

In the Primorskugol Production Association the annual plan was not fulfilled by 184 brigades, or 23.1 percent of them, while the association fulfilled the plan for extraction by 100.4 percent and for conducting mining developments--by 103.9 percent. What is the reason for this difference?

An analysis showed that it was not only and not so much a matter of the brigades themselves. The quality of the engineering prognosis of the mining and geological conditions under which the brigades will have to work is of decisive significance. The analyzed plans of the brigades differ sharply in terms of difficulty. Based on the data that were obtained, and also on a questionnaire of participants in schools of advanced practice in applying the BFOST, we arrived at the need to increase the responsibility of engineering and technical personnel for the development of plans for the brigades.

An adjustment of the amounts of bonuses for engineering and technical personnel was introduced through the coefficient that takes into account the stability of the work of the brigades. The coefficient of stability is determined for each kind of work (process) according to the final results. These include extraction, conducting mining developments, strip mining, output of concentrate, and so forth. Following the recommendations of economists from the GDR, we stipulated that the brigades' failure to fulfill the plan

within the range of 7-10 percent depends on them themselves, while the rest depends on the quality of the plans.

Chairmen: There is in the question under consideration at least one principal aspect: the determination of the significance of the labor of various categories of workers in the brigade. It is gratifying that the labor of engineering and technical personnel is regarded as an organic part of the total labor productivity of the collective worker (brigade). It seems that it would be necessary to formulate the following principles as well: the labor of any engineering and technical worker is more significant for the overall results of the activity of the brigade than that of the most highly qualified worker: the earnings of any engineering and technical worker should be higher than those of any worker, and so forth. These principles have already been verified in operation--in the Novosibirsk experiment for applying the collective contract to sections, shops and other such structural subdivisions.

It seems that collectives form some organization and stimulation of labor, including BFOST, create favorable conditions for the labor engineer and the position of the engineer in production, and increase the effectiveness of mental labor.

On the basis of materials of the present correspondence of EKO readers one can formulate a number of conclusions.

1. We have a right to consider the brigade form of organization and stimulation and flexibility to all categories of workers.
2. The goal of extensive and all-inclusive dissemination of the BOFST is the formation of a collectivist awareness and behavior out of which can grow the highest productivity of public labor. BFOST is the first stage of collective forms of organization and stimulation of labor. One should refrain from significant limitations on its application. If the conditions "do not allow," it is necessary to consider whether it would be better to change these conditions.
3. BFOST should be regarded not statistically, but in continuous development. The best regards are those which today have capabilities of further development.
4. It is the duty of science to equip brigades with methods of distributing the general earnings which would eliminate the fundamental shortcomings and the existing methods.
5. Having rejected individual forms of organization and stimulation of labor, it would be reasonable to reject its existing division. Within the framework of a collective piece-rate worker, which the brigade is, differences between piece-rate and time-rate workers and basic and auxiliary workers are eliminated. This situation is in need of legal reinforcement.

Read in EKO

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#### FOOTNOTES

1. Marx, K., and Engels, F., "Soch." [Works], Vol 19, p 18.
2. Ibid., Vol 46, Part 1, p 116.
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## DIRECTOR DISCUSSES RECONSTRUCTION PROJECT

Novosibirsk EKONOMIKA I ORGANIZATSIIA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 69-77

[Article by V. V. Babkin, general director of the Ammofos Production Association (Cherepovets): "Reconstruction and the Path to the Foreign Market"]

### [Text] The Need for Reconstruction

Our association is one of the largest for producing mineral fertilizers. We produce 22 percent of the phosphoric acid in the USSR, 14.5 percent of the sulfuric acid and 10 percent of the mineral fertilizers. The construction of the Cherepovets Chemical Plant (subsequently the Ammofos Association) was begun in 1970. In a short period of time we had constructed the startup complex, which in 1974 provided the first product--sulfuric acid. Subsequent years in the history of the enterprise were a period of rapid construction, the creation of new capacities, and growth of the production potential.

With the completion of the difficult program for construction and the introduction of the production capacities, production volumes had to be further increased as a result of intensive factors. The growth rates of production considerably outstripped the growth of the numbers of personnel, and under the 11th Five-Year Plan the increase in the output of products was achieved basically as a result of increasing labor productivity.

It would seem that such a young enterprise as ours would require no reconstruction. Indeed, the plant was constructed according to modern plans with the application of sets of equipment with large unit capacities and effective computer complexes. Many technological processes were on a level with the best world models, and in certain cases even surpassed them. Nonetheless, beginning in 1983 we began to carry out a large-scale program of reconstruction and technical reequipment. In so doing we pursued three goals, which were sequentially set and reached:

Through the reconstruction of incompletely developed and less promising sets of equipment and processes, to provide for stable fulfillment of the plan.

To put to work frozen fixed capital which appeared at the enterprise as a result of incomplete planning and scientific developments.

To provide for the output of competitive products and to put them on the foreign market.

For a couple of years the association experienced difficulties in fulfilling the plan for the output of complex fertilizer—Nitroammonofoska. The production technology for this branch of fertilizer involved large expenditures of energy (of 15 parts of semimanufactured products moved along the technological chain only one part ended up as the prepared product), increased danger of fire and explosion in production, and regular interruptions in the deliveries of raw material. As a result, the level of utilization of capacities for producing this product did not exceed 60 percent, the equipment broke down frequently, the culture of production was low, and labor turnover significantly exceeded permissible limits. In 1981 the need to reorganize this production had already become a real subject of discussion in the labor collective. In a word, there were objective and subjective factors that made this reorganization necessary.

### Three Rules of Reconstruction

The decision concerning this was made in 1983, that is, at a time when there were no normative documents providing for priority of reconstruction over new construction. This meant in particular that we could not count on priority allotment of equipment or materials or limits on capital investments or the plan. The main obstacle was the fact that reconstruction was not regarded as a project in the five-year plan. Therefore the association's management could count on basically its own forces. During this difficult period, a lot of support was provided to the association by local party agencies, which took responsibility for coordinating the efforts of all participants in the reconstruction and emphasize the importance of the work carried out by contracting organizations. This made it possible not only to carry out the earmarked specialized construction work, but also to join it into a unified whole which had the common goal of creating a principally new technology in the existing shop. Thus we surmounted the main difficulty: the lack of a unified plan for reconstruction, which, according to existing provisions, should have gone through all stages of coordination.

Assistance rendered to the enterprise by the chief of Soyuzglavkhimkomplekt of the USSR Gosnab at that time, A. A. Kudryavtsev, was of decisive significance. Having visited the enterprise and become familiar with the suggestions of plant specialists and scientists, he immediately believed in the effectiveness of reconstruction and gave an instruction to allot the necessary specialized materials outside the plan.

In keeping with the suggestions of the branch scientific research institute, the plant was permitted to create not only a stable new process which would provide for complete loading of the capacities, but also to make it one that would save on resources, directed toward the output of ecologically harmless products that have high physicochemical characteristics. The implementation of this task made it possible to arrange for the production of competitive

brands of fertilizers which in terms of the majority of their indicators surpass the level of world standards.

In 1984 the work for reconstruction was completed. The use of the technology was the exclusion of nitrate forms made it possible to significantly improve the physicochemical properties of fertilizers, to ship the products without conditioning or packaging, to provide for complete mechanization of loading and unloading work, and to reduce the number of service personnel by 30. The reconstruction of existing installations for producing new fertilizers was carried out without reducing production capacities and with relatively small expenditures. The concentration of nutritive substances in the fertilizers was increased. There was a considerable reduction of the need for packaging materials, labor productivity increased by a factor of 1.5, the material-intensiveness of the product decreased (the savings on raw material amounts to 114 rubles per 1 ton of product), and the energy-intensiveness of the process decreased by 10 percent. We stopped using certain sources of raw material that are in critically short supply.

As a result of reconstruction in 1985 we achieved an effect of 8 million rubles, and under the 12th Five-Year Plan it is increasing to 40 million rubles. Applying the enterprise's practice throughout the branch can produce a savings of 19 million rubles.

Large-scale reconstruction enabled us to formulate the first rule of technical reequipment: when proceeding toward reconstruction of production, do not limit yourself to solving problems that have already arisen and current tasks. Achieve several future goals at the same time.

In 1985 a new goal was set for the plant's collective: on the basis of measures for technical reequipment, to put to work the production which had been inactive because of technical factors. The association had an experimental production shop which, because of incomplete planning and scientific developments, was unable to provide for the output of products. Tens of millions of rubles spent on creating fixed capital and maintaining it were frozen here for many years. After many years of unsuccessful attempts to start up and partially modernize individual units, a scientific analysis was conducted of the feasibility of chemical reaction in the given form of the equipment. It turned out that it was impossible to organize the production of products according to the planned system. The chemical industry, as distinct from other branches, engages not only in processing, but also in transforming initial materials. It is this transformation, which is sometimes carried out in a nontraditional way because of a shortage of data concerning the kinetics of the process, that takes place with great difficulty in production, and sometimes it even leads to a loss of products.

Specialists had to make a choice between eliminating the fixed capital or trying to reconstruct it. The latter path was selected. Since the process as a whole was impossible, it was decided to "cut" the technological system into parts and, having selected a relatively workable unit, to make it function autonomously. The breaking down of one technological stage also determines the volume of reconstruction. That which previously was a semimanufactured product now became the prepared product. New units were needed for

conditioning, packing and packaging. Naturally, other sections were also subjected to significant modernization. Guided by the first rule of reconstruction, we set several large-scale goals at the same time: to make the nonworking production work, to arrange for producing a product of better quality than that of the analogues existing on the market, to introduce resource-saving technology, to simplify the equipment and to increase its reliability. But, having carried out the entire volume of construction work, we still did not achieve the desired effect. It was necessary to develop a second variant of reconstruction. It did not produce the desired result either, but it enabled us to come significantly closer to the goal. And it was only the third variant, which was realized in the middle of 1985, that made it possible to achieve the earmarked goals. As a result, the association began to produce a new product of a higher quality than others like it, which, in turn, can serve as future raw material for developing the production of extremely valuable products and products that were in short supply.

During the course of reconstructing this production we released 2 million rubles' worth of fixed capital, the consumption of energy for 1 ton of product was reduced almost by a factor of 5, and the volume of products produced increased by a factor of 5.

The experience accumulated as a result of the complex technology for restructuring nonworking production made it possible to formulate the second rule of reconstruction: the plan for reconstruction of a complex object should be flexible and should include several variants, each of which should be another step toward the achievement of the goal that has been set.

The two examples of reconstruction described above, of course, do not create a complete picture of it under the 11th Five-Year Plan. Thus as a result of technical reequipment, one of the shops created a flexible technological system for producing phosphoric acid, and all the repair work was conducted at the enterprise under the motto: "Not a Single Capital Repair Without Reconstruction and Modernization of the Equipment." The measures that were conducted for reconstruction became the main lever in intensification of production and made it possible to fulfill the assignment for the 11th Five-Year Plan ahead of schedule, in 4.5 years.

Having analyzed the experience in reconstruction of existing productions, we became convinced that the products produced with the updated active part of the fixed capital were either close to the world standards or surpassed them. This was partially planned and part of the result was achieved indirectly since the large goals of reconstruction (resource saving, optimization of technology, the introduction of new processes) simply led to the formation of new and better quality characteristics of the product. Therefore we asked the question: And why not immediately set as a major goal the achievement of higher quality characteristics? Utilizing the procedures and devices of the target-program approach, we can carry out a chain of measures for attaining and surpassing world standards. The third rule of reconstruction was formulated as follows: conduct reconstruction of production while oriented immediately toward the output of competitive products.

As was already said, as a result of reconstruction of the production of complex mineral fertilizers their quality reached the level of world standards, and in a number of cases surpassed it. This made it possible to develop the sale of a new kind of fertilizer to foreign countries, and the shops that produced fluorine compounds could be oriented basically toward export deliveries. It is typical that the latter productions processed technological wastes formed in the production of fertilizers.

#### The Enterprise and the Ministry of Foreign Trade

When the production of complex fertilizers was being reconstructed the selection of new technology was dictated by more than just the optimal technology that provides for rhythmic fulfillment of the plan. We studied data from literature on analogues of the product that are produced by leading firms of the United States, France, Spain and Japan. Thus we set the task of surpassing such important characteristics of foreign products as the content of the main substance and the moisture content. At the same time the sale of a batch of fertilizers for export involved great difficulties not because they could not compete, but because of the need to overcome departmental barriers. Efforts were needed to overcome these. The plant was not invited to conduct negotiations with foreign firms. Up to this point we do not know either the firm that acquired our products or the sum of the earnings. The lack of direct contacts had an especially unfavorable effect on determining the degree to which the product could compete. And the problem is not even that the intermediate units could not be competent in all technical questions, but that we do not receive information about what is required of our products and what qualitative characteristics are expected of them.

The principle of a monopoly of foreign trade by certain specialists in the Ministry of Foreign Trade is distorted to the absurd and reaches the point of completely isolating the supplier from the consumer. Requests to arrange normal technical cooperation have been resolutely rejected with reference to the incompetence of plant specialists in questions of foreign trade and the need to observe special foreign trade rituals.

When conducting the reconstruction and preparing the production of products containing fluorine we asked the ministry of foreign trade to tell us the chemicals suitable for our technology which could easily be exported. Having received this information concerning one of the products, the plant specialists began to put together the set of technological equipment. That is, the construction was immediately programmed for the output of a competitive product. This essential innovation required more than just progressive technical solutions. It formulated the priority of interests of the consumer over the producer. The organization of production from beginning to end was carried out in the interests of the consumer. But one can object that this principle has always been followed when organizing new productions. Our approach is distinguished by two features: the first is that the production is immediately oriented to the world level and the second is that the reconstruction was flexible in nature and the consumer could change his requirements for the product and the reconstruction would change in keeping with this.

As in the example discussed above, there were no direct contacts with the consumers of the products and all information necessary for restructuring production came from the Ministry of Foreign Trade. Its workers were mistrustful of our guarantees to observe the requirements of the foreign firms. Therefore the Ministry of Foreign Trade, when it received our information, still asked the branch scientific research institute to confirm its correctness. This all ended with a situation where in one of the stages of reconstruction the institute told the Ministry of Foreign Trade that a product of the quality guaranteed by the plant could not be obtained at all.... Having overcome this lack of confidence as well, we were able to deliver for export exactly the product that was required by the foreign firms.

On the scale of our enterprise, export deliveries are local in nature, but we assumed that they could be increased many times over if we were to strengthen direct ties with the consumers. The sales market that has just been taken over must be expanded. Questions of prices, as was mentioned above, are "taboo" for the Ministry of Foreign Trade and it seems to us that this is the first barrier which must be destroyed on the path to expanding the rights of enterprises and orienting them toward producing competitive products. The prices cannot be separated from the technical equipment, from the qualitative characteristics or from the sizes of the sales market. Prices for fertilizers in the West fluctuate according to the seasons and therefore when concluding transactions one can obtain various sums for the same commodity. In a word, the participation of workers of the enterprises in the determination of the price for the products they export is a question which requires not discussion but a positive resolution.

Summing up the experience in interacting with foreign trade organizations, we can single out the major thing: the effectiveness of export operations can be increased many times over with reliable information concerning the competing products, the market conditions and the prices for the product. Therefore reconstruction of productions with an orientation toward producing competitive products requires of the branch planning and scientific research institutes a principally new approach to the development of initial data and assignments for planning.

Having analyzed the methods of intensification of production, we decided that under the 12th Five-Year Plan our main direction would be the introduction of new technology and optimal conditions that enable the reconstructed shops to produce only products that can compete. This will make it possible to increase deliveries for export by a factor of 4 as compared to the 11th Five-Year Plan. Reconstruction of the basic productions will make it possible to update the assortment by 70 percent. By taking advantage of the achievements of electronic equipment and computer systems for control, optimization of technology, mechanization of auxiliary processes and the introduction of industrial robots, we will set the task of transforming the Cherepovets Ammofos Production Association into an automated industrial complex.

The high effectiveness of technical reequipment of production, modernization of equipment and reconstruction of technological systems made it possible even in 1985 to change our enterprise over to self-financing of all expenditures on simple and expanded reproduction.

In order to provide for an inseparable unity of current activity and long-range planning, specialists of the association are drawing up a comprehensive scientific and technical program for the development of the enterprise until the year 2000. This will be used as a basis for the process for continuous planning of assignments under the 12th Five-Year Plan.

The central press writes fairly frequently about the Ammofos Association and the affairs of our collective. Last year alone there were about a dozen of these articles, and there are critical ones among them, including one directed at me on the pages of PRAVDA regarding questions of planning capital investments. These remarks were taken as an incentive to accelerate the processes of reconstruction in all spheres of the collective's life.

What are the first results of this complicated and painstaking work?

Comparing analogous periods and time segments before and after the 27th Congress, one can say that the enterprise, having the previous number of personnel and the previous value of fixed capital, has increased the output of fertilizers by 8 percent, the commodity output as increased by 14 percent, the production costs have decreased by 4 percent, and the increase in labor productivity has amounted to 8 percent. The efforts of the entire collective have contributed to this, and no small role in their activization was played by the fact that during this same period the value of fixed capital of social, cultural and domestic facilities increased by a factor of 1.6, and this increase was provided mainly through the association's workers themselves.

In response to the appeal of the CPSU Central Committee for developing socialist competition under the 12th Five-Year Plan, it was decided to fulfill the assignment for 2 years for such a large-tonnage product as sulfuric acid by the 70th anniversary of Great October, for producing mineral fertilizers--by 1 December, and to produce 13,000 tons of fertilizers without bringing in additional raw material or fuel-energy resources and to send them to regions with intensive farming technology.

Recently they called me from the Ministry of Foreign Trade and expressed doubts that a large batch of dye ammonium phosphate could be sold to capitalist countries at competitive prices (which?). I told them that we have a product with a principally new complex of properties--Diammofoska--and they should sell it and test the market, and that it was important to us how it would sell. They answered that it is difficult to sell a new product and that they wanted to sell what we had already sold, especially since there was a demand for it. I had to agree.

What would happen if we did not agree? And we could restructure our operation not alone, but with everyone involved?

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## ACADEMICIAN REFLECTS ON ECONOMICS AND ETHICS

Novosibirsk EKONOMIKA I ORGANIZATSIIA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 78-90

[Article by Academician A. D. Aleksandrov (Leningrad): "Thoughts About Economics and Ethics"]

[Text] The combination--economics and ethics--might seem like a union of opposites: it is "mundane" materiality that is linked to a lofty striving for good which inspires humanist ethics. Let us turn, however, to the "initial source"--to language. The word "good" designates a moral good and at the same time a material one--"property, things, belongings," as it is explained in the Dictionary of the Russian Language [Footnote 1]. It is the same in other languages: good is defined as the good, and it can be both moral and material [Footnote 2]. Thus also when analyzing the origin of other moral categories, one discovers their link with economic categories and, one might even say, their derivation from these latter as was shown, in particular, by Paul Lafargue in his research on this subject [Footnote 3].

This is quite natural: morality as a system of norms that regulate relations among people is inseparably linked to these same relations in the insurance and reproduction of the life of the society itself, and particularly in the sphere of economics; it reinforces economic relations in its norms. For example, one of the commandments of Moses condemned attempting to take another's property, but, for instance, until recently the Eskimos did not have the concept of property; and if one Eskimo took another's harpoon and broke it, they did not condemn him but only laughed at his clumsiness and inability to use a harpoon.

### The Role of Morality

Growing up on the soil of material relations that have taken form, morality itself becomes an active regulator of them. But in all preceding socioeconomic formulations, man's economic behavior has been very strictly regulated by material necessity itself. In a bourgeois society the capitalist is provoked to fight for "survival" by competition, by the threat of being deprived of his position, and the threat of unemployment hangs over the worker. Once I was standing with a young American on the upper balcony of the highest building in the world in New York, and my companion, looking at the panorama spread out

before us, said: "This is a terrible city: everyone is in a hurry here, they push one another, and woe be to the one who falls." But it is precisely the tension created by the constant threat of "falling" that forces everyone to actively select from the improvements in technology and the organization of production. In keeping with these same principles the managers and the entrepreneurs are very concerned about satisfying the consumers, but not for the sake of the consumers themselves, but for the sake of their own income, which they will not receive if the consumer is taken away by a competitor.

In opposition to all the preceding formulations and especially to capitalism, communism is a society without coercion. Especially in its highest stage, where one conceives of free development of each individual who will freely produce values according to his capabilities and take them according to his needs. Before realizing these principles of freedom, the society must travel a fairly long path. But even in the first stage of communism—under socialism and in its initial stages—the economic system that has taken form removes the rigidity of coercion and removes the tension. The individual knows that in general nothing terrible can happen to him. Even if the manager loses his position because the work has failed, he will be given another position that is not quite as good. But in any event he will not hit the bottom.

Under socialism morals change in keeping with the socioeconomic system, becoming less individualistic and more humanistic. At the same time, the relationship between morals and economics changes: a weakening of the role of rigid economic stimuli and a removal of the tensions created by this increase the significance of moral stimuli. But they do not acquire real force immediately; rather the weakening of the external stimulus makes it possible for the tensions caused by it to weaken, and man's efforts in the sphere of economics decrease.

The dialectical contradiction works this way: The humanism of socialism generates an impediment to its own development; it requires concern for man, whose realization requires the corresponding ethics; but since the society initially must be concerned about man, many regard this concern as their due; there appears the idea that man does not need to "earn" this concern, that in general it requires no special efforts.... And if such attitudes assume a mass character, then the rates of economic development can decrease and the needs of the people will not be satisfied to the degree which they expect.

In practice liberalism and permissiveness in the area of management, by creating the more desirable "easy life," thus also create its difficulties. For coercion, by increasing demandingness and creating tensions, would stand in contradiction to humanism. Herein lies the internal contradiction. This contradiction includes as something contributing to its resolution the moral factor, where man is led no longer to external coercion, but internal motivation, with which man departs from the dominance of external need into the area of freedom. Communism takes form in the process of the gradual resolution of this contradiction and in the combination of material and moral progress which leads to freedom. Under the conditions of the gradual advancement toward communism, as is emphasized in the program of the Communist Party of the Soviet Union adopted at the 27th CPSU Congress, one reveals ever more fully the creative potential of communist morality.

## Goals and Means of Communist Morality

The essence of communist morality was defined by V. I. Lenin in brief terms: at the basis of communist morality lies the struggle for the strengthening and perfection of communism" [Footnote 4]. And since the strengthening of communism (socialism) includes the development of material production and the corresponding relations in its sphere, it is clear that communist morality as understood by Lenin combines humanistic ethics with economics, including as a mandatory requirement all-round concern for the strengthening and the development of the socialist economy.

Above we were discussing morals, but here we are talking about morality; in ordinary life and even in dictionaries these words are frequently used as synonyms. But in the Russian language they have different meanings. Morals are a system of behavioral norms while morality is a quality of human activity, deeds, thoughts and relations to other people which is determined through the correspondence to the concepts of the good and the proper, which is expressed in the norms of morals.

The Leninist definition of the basis of communist morality may cause certain people to fear that it includes a well-known principle: "The end justifies the means." But that is a deception. In principle the Jesuit goal, "Salvation of the soul," is conceived in a different world, and earthly means can in no way influence it; they are perceived as completely negligible as compared to the goal and in comparison to it their evaluation is of no significance.

In the real, "earthly" world the means applied, regardless of what they may be in and of themselves, mean a great deal. They can contribute to the goal, or perhaps lead to it, but at the same time they can produce "side effects" which are so evil as to completely outweigh the goods that could be produced by the achievement of the goal and they can "in passing" distort the goal itself or even completely destroy it. In Krylov's fable the bear who used the stone to achieve a good goal--to protect the sleep of the Hermit--destroys his goal.

An understanding of this relationship between the goal and the means is extremely important for communist morals. The means that can be used to strengthen the communist system and develop it are themselves events and phenomena in the society. And so in one way or another they enter into the process of its development. Therefore they themselves must be evaluated from the standpoint of the degree to which they strengthen communism and advance its development. For it can happen that the means that are applied, while leading to a local goal, can at the same time lead to results that oppose more general tasks. Thus, for instance, a manager, while achieving high results can behave himself with his co-workers in such a way that he will establish and reinforce relations among people that are not at all appropriate for communism.

In brief one could say that communist means are needed for communist goals. And if in certain cases it is necessary to depart from this principle, then it is necessary to account as strictly as possible for these deviations, to analyze them and to explain the decisions that have been made publicly in

order that the negative effects of the means do not offset the effect of the achievement of the goal. This is especially important in the relationship between economics and ethics. Economics embraces a sphere of production and the sphere of consumption. In the former man acts as a producer of goods, and morality requires his maximum performance. In the latter--in consumption--man acts as the goal, and morality requires a maximum satisfaction of his demands. But it would be absurd to "squeeze" a maximum performance out of people for the sake of maximum satisfaction of their needs. Moreover, enrichment of the content and improvement of the conditions for labor are also an essential need of the working person, and even work itself is more and more frequently a need.

Thus both in the life of the society as a whole and directly in the economy the goals and means are mutually conditioned, and that which will serve as a goal in one respect turns out to be a means in another, and vice versa. In the final analysis, in everything (in science, in art, in public production) the people themselves are both the goal and the initial means because everything is for man and everything is from man, for he creates all values.

According to the Leninist definition of communist morality, man's activity is moral if it is directed toward the strengthening and development of communism (socialism) or at least contributes to it both in goals and in means or, more precisely, in the unity of these. The center of communist morality is humanism, but not in and of itself, but in combination with the concept of responsibility. Humanism is first and foremost what in simple language is called a human attitude toward people, beginning with elementary respect, attention and concern. Responsibility as a moral category as distinct from a legal one is a sense of duty not to an external court, but to an internal court of conscience, conscientiousness. Understanding means a man's desire for objective understanding, his desire to establish the truth and always to take this into account in his actions.

All three of these constituent parts of morality (humanism responsibility and understanding) are most closely interconnected with one another. Responsibility requires a striving for objective understanding and, in turn, it makes it possible to clarify what real humanism consists of and what man's real responsibility is, for what he is objectively responsible and to what extent. Responsibility also requires the embodiment of morality in action, without which morality cannot be real. The desire for objective understanding, for seeking the truth and unconditionally taking it into account is usually not included in the norms of morals at all, although even a simple desire to help a person requires a desire to understand what he needs and how to do it. And humanism, the desire to create good cannot do without an answer to the question "What do people need?" which, incidentally, was raised by L. N. Tolstoi with his typical insistence. And if we actually wish to relate to people in a human way, with respect and attention, we must try to approach this answer objectively: not through intellectual criteria, but on the basis of a study of the real interests, needs and expectations of man. This is precisely what science requires. The more so, if the question is put in the developed form: what is needed not only one's dear ones, but also those who are distant, the entire society, and not only now, but also in the future.

After the question "What do people need?" follows the question "What can one do for them?" The question of the real possibilities also requires a scientific approach, for without it all the good wishes risk turning into hypocrisy. But even with the scientific approach they remain morally empty unless they are embodied in action.

All that has been said relates mostly directly to economics. After all, the goal of socialist production is to provide for the most complete well-being and free development of all members of the society. The achievement of this goal of production, maximum satisfaction of the growing needs of all members of society, requires an objective, scientifically substantiated understanding of what people need: how they themselves see their needs, their well-being, and not only in the present, but also in the foreseeable future.

Regardless of how scientifically substantiated the understanding of needs may be, it remains in the area of wishes if it is not provided with the corresponding development of production. This development is provided through the activity of people, and on the moral plane--to their awareness of their responsibility at all levels, from the truckloader to the chairman of the Council of Ministers. So we have returned in our thoughts to the fact that it is precisely responsibility and conscience that comprise the basic unit of moral forces which can provide both for the development of production and for maximum satisfaction of the growing needs. Without this, the basic economic law is not realized fully, and the words "Everything for Men" can remain a slogan and not an expression of the vital position of each worker.

#### **What Do People Need?**

In order to seriously answer the question "What do people need?", in order to provide for scientific, objectively substantiated planning and control over the satisfaction of the population's needs, it would be expedient, in our opinion, to create the appropriate governmental agency--we can arbitrarily call it the State Committee for Needs. Otherwise the needs of the people as a unified whole can receive no attention; for instance, the Ministry of Trade is engaged in its affairs, and the stores under it are concerned not so much about the needs of people as about the fulfillment of plans. This is also the situation in other economic units, and every Soviet person knows this from its own experience.

The committee's tasks would include the study and prognostication of the needs of the population and ways of satisfying them; the preparation of preplanning documents, and also instructions to agencies in the sphere of services, and inspection and control of the satisfaction of needs in all spheres of social life.

The committee's activity pertaining to the study and prognostication of needs and their satisfaction could be carried out both through research work in central and regional institutes under its jurisdiction and through coordination and generalization of research that is conducted by other organizations--within the frameworks of academies of sciences, in VUZes and so forth. For example, the Ministry of Trade even today engages in a study of demand; but it is necessary to raise this work to a higher level and make it

more objective, so that it addresses itself to the real needs of people and not to squeezing money out of them in order to fulfill trade plans.

Scientific problems pertaining to needs are closest to the area of sociology, and therefore the corresponding front of scientific research should be provided.

Recommendations made by the committee to the planning agencies and production and trade organizations should be mandatory or should become so after they are approved by the USSR Council of Ministers. This would reinforce the inspection team with control on the part of the committee. Control should be competent, deep, it should come from an independent agency, and it should be effective, that is, it should lead to concrete results, to an improvement of things. Therefore it is necessary for control to come from an agency that has power. Then it will be possible in fact "not to provide a peaceful life" for organizations and workers who, without performing their direct duty, care little about the good of people, reduce or generally halt the production of necessary things, and allow neglect of the service of workers.

Fulfillment of plans should mean that the things that are produced are actually consumed, used according to their purpose, and are not left in warehouses or the stores and are not turned in immediately to be reworked. Fulfillment of plans should be determined according to the consumed product (which can pertain the same way to any kind of it).

It is immoral when an enterprise works "for the indicator" and not for the consumer (whether it be an individual person or another enterprise). The economy is distorted and this entails a moral or, rather, an amoral position: "not for the people, but for the plan." In other words, for the report to the higher-ups, in order to look good in their eyes, and to obtain a bonus while ignoring the interests of the consumers. Recall that after all we have become accustomed to a situation in which the stores frequently sell poor-quality goods. Who has not seen ugly footwear gathering dust on the shelves, a sacklike, boring dress which could distort any figure? Cameras and tape recorders in which something immediately breaks. Color television sets produced at the end of the quarter which break down in the first months of operation...and so forth and so on. Warranty repair is widespread...but what does this mean if not that something is being admitted ahead of time: the new item will require repair. And such a situation should be an exception, and the item should simply be replaced. And if the fulfillment of the plan were evaluated, as was said, according to the things that are consumed, those that are brought in for repair or returned should be subtracted from the indicators of "fulfillment."

So much is constantly being written about phenomena like these in the press that it is even boring to read about them. Things are improving, of course, but too slowly.

In all of this one can see a contempt for the people and irresponsibility, a trampling of communist morality. Moreover, the tone of the press does not always reveal the moral significance of these phenomena. And yet many phenomena are simply amazing. For the average family the purchase of an

automobile is an event of immense significance. But how does this take place? The buyers wait for hours, like beggars, on the street or in a crowded, dirty room. And when, finally, the buyer is able to take the vehicle away, he sees that all the vehicles have defects. And in order to get a tolerable one they must give the salesman a plain bribe--only then will he select the best one and perhaps even take a missing part for you from another vehicle.... Yet immense amounts of money are paid for the automobiles, and the prices have increased over a period of 20 years. For this kind of money one would expect that the buyer would be received in a pleasant room, and would be allowed to choose his vehicle, with the guarantee that it would be in excellent condition. Why is this not the case, and where does the contempt for the people come from?...

A problem much more important than that of private automobiles is public catering and the provision of recreation and communication for the workers which are related to it. Can a person go to a cafe after work and rest, read a newspaper, meet with his friends, and have it clean, quiet and inexpensive there—is this really possible? Or would it be possible to receive guests not necessarily at home (thus making the wife deal with the difficulties of having company) but ask them to spend the evening in some cafe or restaurant as one can do in many European countries? But our restaurants and cafes up to this point are not for normal recreation and communication, but for other purposes. Sermons about sobriety and moral behavior are meaningless if they are not supported by real possibilities of acting on them. And here is the closest connection between economics and ethics--restaurant income and moral expenditures. Just as a shortage of goods and the difficulties associated with purchasing them create conditions for speculation and "crime," so the lack of inexpensive cafes prepares the soil for drunkenness. Shortcomings in economics inevitably prepare the soil for violations of moral norms and criminality.

Of course, the creation of an extensive network of tea rooms, cafes and quiet restaurants is not a simple matter. But there are necessary things which can be done quite simply, and even these are not being done. A striking example is glasses!

Glasses are an exceptionally important thing: they correct the vision, and is there really any need to explain the significance of this! Glasses shculd also adorn the face and be comfortable and attractive. It is no problem for modern production to make glasses. It would seem possible to flood the country with glasses of any curvature and frames of any shape, for any face and to any taste. But glasses still remain a problem, and this has been going on for decades.

A multitude of similar cases, large and small, show that a number of departments pay more attention to the needs of people in words than in deeds, although the managers of these departments undoubtedly read the party documents and, perhaps, even give speeches about communist morality. And it is necessary for the committee for needs to remind the people who should be concerned about people and their needs. And they should not only be reminded, but it should be pointed out with evidence what, specifically, people need first and what should lie at the basis of plans and the evaluation of their

fulfillment. The moral question, "What do people need?" here becomes an economic question, and it must be resolved by changing the course of production so that it operates not for the sake of indicators, but for the sake of man. And if the goal of production is maximum satisfaction of human needs, all planning should be based on these needs, correspondingly determining the plans for all branches, including those that do not produce things directly consumed by people. The committee for needs would be an expression of the Union of Economics and Ethics, and its activity would combine all of the constituent parts of communist morality: humanism, manifested in concern for the people, an understanding of their needs, and responsibility for their satisfaction.

### Concerning Responsibility

For many centuries the feeling of responsibility has been called, briefly: conscience. This is the major moral force. And those who in their daily work do not do what they are supposed to suffer from a bad conscience. The examples we have given here of inattention to the needs of people--examples which could be multiplied many times over--indicate precisely this. In the sphere of production responsibility is also good conscience. Morality, the more so communist morality, organically includes the duty of conscientious labor, for the "strengthening and culmination of communism" can take place only as a result of conscientious labor. There simply is no other source of material and spiritual wealth of the society than labor. Thus conscientiousness in labor and the love of labor are organically included in communist morality.

In his speech entitled "Tasks of the Youth Unions," V. I. Lenin said: "It is necessary for the whole business of rearing, educating and training modern youth to be the development of communist morality in them" [Footnote 5]. In that same place, V. I. Lenin expressed and repeatedly emphasized that this development is unthinkable outside of labor: "It is necessary for the communist youth union to combine its education, its training and its rearing with the labor of workers and peasants and not rely on its own schools" [Footnote 6]. Of course this was said at a different time, when the country was faced with the task of overcoming its collapse. But the culmination of training, education and rearing with labor remains the basis of the development of communist morality. But development of communist morality as a major goal has in some strange way with time slipped from first place to somewhere in the background. Even in documents concerning the reform of the school labor education is listed separately from morality and the worth of V. I. Lenin concerning the development of communist morality is placed not in the heading, but somewhere in the middle of the decision regarding "moral education," as if it existed separately from labor education.

And in the combination of moral education and labor, there should also be an even greater degree of unity of economics and ethics, since economic development is based only on labor, whether it be the labor of the worker, the scientist or the organizer. Manifested in man's attitude toward labor is his social position, for how else does he serve society than with his labor! Without labor service to the society and devotion to the cause of communism become empty words. In exactly the same way, the fundamental moral principles

--conscience, truth, honor, noble behavior--cannot be separated from the attitude toward labor: it is also a matter of honor. Man's responsibility and worth consist first and foremost in the volume of the positive contribution he makes to life. Therefore a responsible attitude toward his labor cannot be reduced to conscientious performance of that which is "assigned." On the contrary, it includes a desire to do his work better, more rapidly, and with better quality than was planned. Under today's conditions it is impossible to stand still. Even to keep up with the changes made by scientific and technical progress it is necessary to participate in it oneself. Morality generally requires that man does not stand still, but is constantly himself.

But in our society during past decades irresponsibility has become fairly widespread, and especially with respect to work and its results. And the existing system of reporting and incentives in certain areas even seems to contribute to the development of a lack of conscientiousness, when a desire to make a little addition to the report on paper concerning the fulfillment of a plan on paper arises easily and is easily carried out....

The life of the society and particularly the morals that take form in it are generalized in philosophy. And here too the obliviousness to responsibility has been very clearly expressed: in the philosophical encyclopedia published in five volumes in the 1960's there is no item at all called "Responsibility." There was no place for it. Not until 1983, in the new "Philosophical Encyclopedic Slavar" was there an article called "Responsibility." It ends with the words: Responsibility for a particular job assumes special importance in the modern stage of communist construction under the conditions of the scientific and technical revolution, when the scale and complexity of the problems resolved by people are increasing to a considerable degree." Although one can say with confidence that responsibility for work is generally important, this is even more true the more significant the possible result of the work that is performed may be. And indeed, in our day the responsibility of managers and the creative intelligentsia is assuming special significance: scientists, engineers, writers, pedagogues and educators of youth. This is a most important problem in the development of our society, and it deserves a special discussion.

Economics and ethics are joined together by a living, multifaceted, dialectical connection. It must be developed and deepening, turning the economy "face to face with man," to his needs, and demanding of each worker a highly conscientious, responsible attitude toward his duties.

#### FOOTNOTES

1. "Dictionary of the Russian Language," Vol 1, Moscow, 1981.
2. Compare the German "gut"--good, blessing; commodity, cargo and so forth, the English "good"--good, blessing; and "goods"--movable property, commodity, baggage.
3. See the article "The Economic Determinism of Marx," Lafargue, P., "Soch." [Works], Vol 3, Moscow-Leningrad, 1931.

4. Lenin, V. I., "Poln. Sobr. Soch." [Complete Collected Works], Vol 41, p 313.
5. Ibid., Vol 41, p 309.
6. Ibid., Vol 41, p 316-317.

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## MATERIAL AND TECHNICAL SUPPLY IMPROPERLY STRUCTURED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 91-99

[Article by Yu. M. Prudkoy, candidate of economic sciences, Moscow Institute of the National Economy imeni G. V. Plekhanov: "Improving the Supply System"]

[Text] The importance of the problems related to efficient organization of material and technical supply for the functioning of the country's national economy, as noted in the decree of the USSR Council of Ministers, "Concerning the Changeover of Associations, Enterprises and Organizations of Individual Ministries and Departments to Material and Technical Supply Under the Policy of Wholesale Trade" (1986) makes it necessary for us to return to this subject (see EKO No 5, 1986). Today we are offering a second selection of materials for the readers' attention.

One can single out various levels (or stages) in planned distribution of the means of production: from the USSR Gosplan and USSR Gossnab to the enterprise. It would seem there would be no gaps in this all-encompassing system. But in practice one is always having to speak about the lack of balance between the planned program and the resources for carrying it out.

### What Causes a Redistribution of Resources?

The need to redistribute means of production is generated by shortcomings in the organization of the initial distribution. According to the existing policy, schedule-orders for products for production and technical purposes are issued by USSR Gossnab agencies long before the beginning of the planning period. Each year before 15 May of the year preceding the one planned, the USSR Gossnab establishes a list of individual kinds of products for production and technical purposes, consolidated specifications and plans for distribution, which the ministries and departments submit to the corresponding main union supply and sales organizations. But machine-building enterprises must order metal products 125 days before the beginning of the delivery period. The future consumers do not yet know their needs for the planned period and do not have a production plan for the next year.... Under these conditions the production workers operate with an enlarged products list.

Plans of the past year comprise the basis for programs for material and technical supply. Moreover, applications are increased when justifying funds and orders are increased when filling out the paperwork for them. In order to be safe from possible unexpected behavior on the part of the suppliers or transportation workers, they order not the entire list of capital consumed by production, but the items that are in the shortest supply (the more popular types, grades and sizes). For example, each year the Lyuberetsy Association for Agricultural Machine Building imeni Ukhtomskiy requires for its program 1,500 kinds of means of production. But it orders only one-third of them—500 of the kinds that are in the shortest supply.

Similar factors bring about an increase in orders when filling out the paperwork for the delivery of products. The consumers must order the necessary means of production in volumes of transit norms, regardless of their actual need. The difference between the transit norm and the actual need also goes into the above-normative supply and it will be exchanged or will remain as nondisposable goods unless it is material that is in short supply. For these and other reasons above-normative supplies have increased by 17 billion rubles a year during the past 5 years. The measures envisioned by the methodological guidelines of the USSR Gossnab of 15 December 1983 were inadequate. It was stipulated that before the first of April of the current year the enterprises had to coordinate the plan for the output of products for the planned period in terms of the products list with a developed assortment. Practice showed that not a single enterprise can have concrete orders by this deadline, which means that it must draw up only drafts of plans and produce an advance schedule-order for the necessary resources. For example, this is the reason why the Moscow Dinamo Plant failed to receive funds for 13,000 tons of rolled metal from the ministry in 1984.

Exchanges, Replacements....

Above-normative supplies are not some static mass of material resources that have settled out. They are constantly being formed by the consumers, they move, they flow through the branches of the national economy, and they complete their independent circulation. This is precisely the basis for the appearance of redistribution relations.

Exchange operations are extensively practiced among industrial enterprises in all branches of the national economy. An example is the exchange operations with rolled ferrous metals at enterprises of the USSR Ministry of Heavy Machine Building served by the GUMTS of Moscow Rayon. The volume of these operations in 1977 for the Kalinin Car Construction Plant amounted to 7,200 tons, for the Kolomenskiy Heavy Machine Tool-Building Plant--6,200 tons, for the Elektrostal'tyazhmash Plant--4,400 tons, and so forth. In certain cases the exchange operations form uncontrolled markets for means of production. But in all cases the motivation for movement in exchange is not the value result, but the raw and processed materials needed by production that are in the shortest supply, which are capable for providing for continuity of the technological process. For example, at one of the plants for high-voltage equipment acrylic plastic has long been used as a universal equivalent: 1 kilogram of acrylic plastic is exchanged for 3.6 square meters of AM-93 rubberized fabric or 97 kilograms of M1X-40 bolts; 78 kilograms of M-16

screws; 21 kilograms of 1-millimeter sheet steel, and so forth.

Since 1975 the Gosnab has been working to regulate exchange operations. The consumers will find variants of exchanges and the territorial agencies register and count exchanged means of production among those that are allotted. Thus in 1984 Mosgornallosnabsbyt registered exchanges amounting to a sum of 11.5 million rubles, reduced funds because of this by a sum of 1.6 million rubles, and sold unmoveable goods worth a sum of 2.6 million rubles. But these figures do not give one an idea of the true volumes of exchange operations. The existing conditions for exchange, because of their complexity, impede the disclosure and use of existing above-normative supplies.

Exchanges are also widespread at the present time. They are used both by production workers and by supply organizations for fulfilling planned indicators. In the opinion of certain researchers, it is necessary to improve the practice of exchanges in the future since they "act as a significant reserve for savings," and material and technical supply agencies also use them to make a large contribution to overall savings and a thrifty attitude toward material resources.

This viewpoint is not sufficiently substantiated. The basic function of exchanges of means of production indicated in the contractual agreement for similar ones that are not in short supply is to help supply organizations meet their basic planned fund-forming indicators. This is a compulsory measure for production. The consumers agree to exchanges since otherwise they will not be able to obtain their allotted funds at all. Exchanges lead to change and deviation from the envisioned technology of production. For example, at the aforementioned Lyuberetsy Plant in 1984 there were more than 1,000 exchanges. Metal alone was overexpended by 281.3 tons. At the Belotserkov Selkhozmash Plant imeni 1 Maya in the press shop alone the overexpenditure of metal because of this factor in 1984 amounted to 712 tons. Similar examples can be found at every enterprise.

Replacements of stipulated funds for others is the prerogative of the state. Other replacements can be made only in connection with refining developments or making the necessary adjustments in the existing standards for new kinds of machines, equipment and materials. But the existing practice of distribution of means of production does not take these requirements into account. Thus the utilization of replacements has enabled the Mosgorglavsnab to raise the level of fulfillment of contractual commitments to the consumer by 2.3 points in 9 months of 1983 as compared to the same period of 1982 and, consequently, to fulfill planning indicators and claim material incentives. One can see manifested in this situation that the role of distribution relations is more active than that of production. The primacy of production relations is violated.

The existing situation is the result of contradictions of the interests of subdivisions of public production that are under various departments and are relatively isolated: industrial enterprises and associations and supply-sales subdivisions of the USSR Gosnab, each of which is directed toward the achievement of its own autonomous final results.

## What Is the Gosnab Interested In?

The economic interest of the main union supply and sales organizations and the territorial Gosnab agencies is directed not toward unconditional and complete provision of a specific production, but toward the fulfillment of their own planning assignments which, as was already noted, do not take into account and with the current planning practice cannot fully take into account the true needs of production. The main fund-forming indicator for their activity is the volume of deliveries of products according to the compiled plans for attachment and the orders that have been issued. The fulfillment of this indicator still does not mean that the consumers will receive the products they need in the necessary assortment or by the necessary deadlines. Let us add that another indicator influences the material incentives for workers of main union supply and sales organizations: the overall sum of profit. Thus they extensively take advantage of the opportunity to compensate for a reduction of material incentive funds as a result of overfulfilling profit plans. All this cannot but influence the quality of the distribution of means of production.

The main fund-forming indicator for territorial subdivisions is the volume of wholesale sales of products to consumers in the products list (assortment) and in keeping with the agreements (orders) that have been concluded. It is formed from the payments of consumers for the intermediary activity of the territorial agencies. The income is formed by the warehouse markup, the markup for selling the products in transit with participation in the accounts, payments from consumers for changing over to direct long-term economic ties, payments for rendering production and other services, and so forth. Thus the goal of the statewide system of material and technical supply from the standpoint of material production consists in achieving intermediate results which should be augmented by supply activity for a specific production or industrial enterprise. The supply service of industrial enterprises is directed toward providing for production, regardless of whether or not the need was taken into account in preliminary planning. Herein lies the principal difference between the supply activity of industrial enterprises and that of Gosnab agencies.

In order to increase the effectiveness of public production and optimize it, the final result of the activity of Gosnab subdivisions should also consist in actually providing for a specific production. Orientation toward planning indicators is only the intermediate result on the path to production. These indicators provide fully only for the cost-accounting independence of Gosnab subdivisions.

Recently several offshoots of possible restructuring have appeared. These include the changeover to warehouse supply, whereby the products are preliminary batched, sorted, and prepared for industrial consumption. From the warehouses it is also easier to organize centralized delivery strictly according to an agreed-upon schedule. Then the average insurance supply of the consumers is reduced. Under these conditions they are protected from the irregularity of deliveries according to direct long-term economic ties and from the transit norms for dispatch.

When territorial supply agencies are oriented toward providing for a specific production, the "information" about the resources of enterprises is effective. This is shown, for example, by the experience in guaranteed comprehensive supply accumulated in the Southern Ural Main Territorial Administration and the many years of experience of the Leningrad Main Territorial Administration.

A great effect is produced by advanced release of products from bases and warehouses of territorial agencies on the strength of future supplies and on the strength of products that have not been received, incomplete sets or products that have been entered under the wrong heading. This makes it possible to eliminate the exchange of products, avoid replacements, and it gets rid of above-normative supplies.

#### What Are the Paths of Restructuring?

When reorganizing the activity of Gossnab subdivisions, in our opinion, a great deal of importance should be attached to their role in the territorial organization of production. One of the possible new structural forms could be, it seems to us, the creation of industrial-supply cooperatives. They would include, on the one hand, industrial enterprises and associations of one rayon or another and, on the other, territorial Gossnab agencies. Organizationally, the structure of the industrial supply cooperatives presupposes transferring all supply and sales activity of the industrial enterprises and associations to the specialized subdivisions of the material and technical supply system—territorial agencies of the USSR Gossnab.

Industrial supply cooperatives would be regional, interdepartmental structural forms. The members of cooperatives, while belonging completely to their previous departments, at the same time would be under the jurisdiction of the cooperation in questions of supply and sales. The highest agency could be a gathering of participants in the cooperatives and a work group for coordinating the work under the main territorial administration of one region or another.

Industrial supply cooperation would essentially mean a further development of such a progressive form of material and technical supply as guaranteed comprehensive supply. It is known that according to the conditions of this form of supply, industrial enterprises transfer to territorial agencies part of their wage fund and personnel, according to the volume of funds turned over for sale. The territorial agencies, in turn, are obligated to guarantee the security of the funds turned over by the consumers. In the territorial agencies it is necessary to create departments for securing production funds. Each department provides for industrial supply cooperation with one or several enterprises. As constituent elements of territorial agencies, the departments for this kind of security will interact freely with the entire structure of territorial agencies and, if necessary, with main union supply and sales organizations, ministries and departments. They should direct and coordinate supply and sales activity within the framework of the territorial agencies. The security department should be the main operational service of the territorial Gossnab administration, being oriented toward the fulfillment of the plan for material and technical supply of the plant or association. Material incentives--bonuses for workers of the department--should depend on

the fulfillment of this plan. These will be paid by the plant. And it determines the amount of the incentive. The constant part of the wages--the salary--is paid according to the location of the department worker by the territorial agency. It also determines the amount of the salary and of the payments from the material incentive fund according to the results of the work for the year. Herein will be a reflection of the peculiarity of the economic stimulation of security departments as compared to the presently existing system for other subdivisions of territorial agencies. In any case, material incentives for supply workers should be made dependent on the security for production, its achievement of high final results, and planned qualitative and quantitative indicators. All the many forms of economic incentives should form a unified comprehensive system and should be directed toward the creation of the final product of production. This would make it possible for the primacy of production relations to be manifested unconditionally.

The creation of industrial supply cooperation would bear witness to the deepening of concentration and specialization of the supply and sales activity of the territorial agencies of the USSR Gossnab. All material resources would be under the control of territorial agencies. A unified supply of the region's means of production would be formed. This would make it possible to efficiently utilize existing national economic resources and to eliminate the possibility of the consumers' forming above-normative supplies. An example could be the experience of workers of Mosgornmetallosnabsbyt. They committed themselves to providing their consumers as products at first demand and according to a schedule that was agreed upon. The consumers turned over to them all their supplies for metal products. As a result, during 1983 the savings on metal amounted to 20,000 tons. Thus one can see the dependency between the level of guarantee of distribution of production funds on the part of the USSR Gossnab organizations and the volume of above-normative supplies remaining with the consumers. The level of guarantee of the means of production increases--above-normative supplies decrease, and vice versa. Industrial supply cooperation, in addition to everything else, will make it possible to considerably reduce and subsequently eliminate the supply and sales activity of industrial enterprises.

Such cooperation would become the only source of supply and consumption of means of production at the rayon level, which would deepen public division of labor. Territorial supply agencies, under the conditions of centralized transportation, could ship to the enterprises of the rayon means of production that had been preliminarily prepared for consumption according to coordinated schedules and ship out the prepared products as well as check on the comprehensive deliveries to the consumers. Industrial supply cooperation would create a real basis for the gradual development of wholesale trade in means of production. More production services would be rendered. There would be an objective possibility of creating, within the framework of the proposed cooperation, centers for providing service for the production process.

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## WAYS TO MAKE PRODUCTION ADVANTAGEOUS SUGGESTED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 99-106

[Article by A. I. Baskin, candidate of economic sciences, and O. G. Yakovlev, candidate of economic sciences, Scientific Research Institute of Material and Technical Supply under the USSR Gosnab: "So That the Economical Will Be Advantageous"]

### [Text] A New Direction for Activity

Combining supply-sales and industrial-production activity is becoming a typical feature at material and technical supply enterprises. Industrial production activity develops in four main directions here:

1--the manufacture of blank pieces and items from production wastes and substandard materials formed by the suppliers of various kinds of products (metal sorting warehouses produce kinds of products necessary to the national economy from wastes of rolled ferrous metals from metallurgical enterprises);

2--the preparation of products for industrial consumption, trimming, cutting, packaging in small containers, selecting sets of materials and items to be delivered at the same time, and so forth);

3--the production of economical new kinds of products using initial materials (manufacture of bent profiles of metal punched and drawn sheet steel and so forth);

4--restoration of the consumer qualities of certain kinds of products that were previously in consumption (electric motors, files).

This enables the consumers to refrain from performing a number of uneconomical "startup" operations of the technological cycle by themselves. As is shown by the advanced experience of enterprises in delivering products, for every 1 million rubles of materials and items delivered with a high degree of technological readiness one can save an average of more than 400 tons of ferrous metals, 80 tons of nonferrous metals, 250 tons of chemical products and industrial rubber items, about 60 tons of cable items, and almost 460 tons of paper products. At the same time the savings on labor expenditures are

equivalent to the work of 55-60 people, and the total economic effect amounts to from 50,000 to 160,000 rubles (depending on the kind of products that are delivered). A considerable savings on material resources is produced by restoring the consumer qualities of kinds of products that were formerly in the process of consumption.

In Moscow the trimming and cutting of 1 ton of ferrous metals in organizations of Mosgorglavnabsbyt cost 8 rubles, while the consumer enterprises spend from 21 to 32 rubles to perform these operations.

In 1983 about 100,000 consumers took advantage of services for preparing products for industrial consumption. The volume of services per 1 consumer amounted to an average of 10 tons, including for ferrous metals--17 tons, chemical products--13 tons, cable and wire products--5 tons, and paper products--1.5 tons. In various regions of the country these indicators deviate considerably from the average figures given by the USSR Gossnab. To a certain degree these deviations can characterize the activity of individual enterprises making deliveries when evaluating their work with the consumers. Thus the largest number of consumers who receive ferrous metallurgy products from the enterprises with delivery in a form ready for industrial consumption in the territorial agencies of the Ukrainian SSR and Kazakhstan are 2,000 and 330 enterprises, respectively. The average volume of prepared products per one consumer are 86 and 90 tons, respectively, which are more than 5 times more than the average indicator for the USSR Gossnab [Footnote 1].

#### How To Coordinate the Interests of the Partners

In order to achieve this, one must observe a number of conditions. With respect to the first and the fourth directions:

the initial materials for production (restoration) of items should be paid for by the supply and sales organizations and the enterprises at prices that are considerably less than the prices for analogous initial materials, but more than the prices paid by organizations of the system for secondary resources for the release of secondary raw materials. The observance of this requirement will create the necessary interest on the part of the owners of the initial material to sell them to material and technical supply agencies.

The prices for produced (restored) items should provide for complete reimbursement to supply-sales organizations and enterprises for expenditures on the production and sales of these items, and should also provide for a level of profitability and time periods for recouping capital investments that are no worse than in the corresponding specialized industrial production.

When establishing prices for produced (restored) items delivered by supply-sales organizations and enterprises, their limit (maximum) level should be determined so that the acquisition of these items would be advantageous to the consumer. This is especially important with respect to restored items, since the time periods of their service, as a rule, are less than for new ones. Therefore, one should consider as a criterion the equality of the prices for restored and new items per unit of their useful effect (time of operation).

With respect to the second direction of production activity (preparation of products for consumption):

the prices of the service that is rendered should be less than the total amount of expenditures for performing analogous operations through the forces of the consumers themselves and should provide for reimbursement of expenditures of supply-sales organizations and enterprises on rendering this, and also for a level of profitability and time periods for recouping capital investments that are no less than for the basic supply and sales activity.

With respect to the third direction of production activity (the manufacture of economical new items):

The prices of the products that are produced should motivate the consumers to use them instead of the traditional ones and at the same time should orient the supply and sales organizations toward basic indicators of activity which would be no less than in the corresponding specialized production.

When evaluating the effectiveness of the organization of production of bent profiles and other analogous kinds of products, it is necessary to take into account possible changes in the level of material supplies. If one is oriented only toward the maximum possible reduction of expenditures, associated with the manufacture of these profiles, one can obtain a negative result from the national economic standpoint.

Calculations show that when the production cost of products is reduced by considerably enlarging the batches, the supplies of the consumers increase to such a degree that the expenditures involved in maintaining them significantly exceed the savings obtained by the manufacturer. Thus when the batches of the production of one of the profiles are increased from a 2-month to a year's supply, the production cost of 1 ton of products for the manufacturer can decrease by 4.1 rubles, but expenditures of the consumers on maintaining the production supplies of these same products must increase by 25.3 rubles (per 1 ton). In other words, the advantage for the manufacturer in this case means a loss for the consumer, which makes the production disadvantageous from a national economic standpoint.

What should be brought to attention?

First and foremost, the production activity of the supply organization should be organized on a sale that provides for the application and efficient loading of modern equipment and complete utilization of labor force so as to provide for the achievement of the required level of production cost and profitability of the products that are produced or the work that is performed. When the corresponding productions are created in the territorial supply agencies, one must carefully substantiate the efficient zones of their activity that provide for an optimal combination of the possible proximity to the partners along economic ties and the economically expedient volumes of production that are sufficient for effective functioning of the enterprises or subdivisions.

It is necessary to combine the orders of many consumers. This will make it possible to reduce to a minimum the wastes of material when trimming or

cutting. But combining orders cannot be regarded as a goal in itself, which impedes the acceptance and fulfillment of urgent or purely individual orders. When manufacturing blank parts with complicated configurations using the latest technology (for example, gas plasma cutting) and a number of other cases, the effect achieved by the consumer more than covers a certain increase in the expenditure of materials at enterprises of the material and technical supply branch. The requirements of the consumers should be given priority, which, however, should be reinforced by the appropriate level of prices for filling these orders.

#### Restructuring in the Gossnab System

Even now the material and technical supply agencies have the necessary technical and technological capabilities for expanding production services to small (in terms of the volume of consumption of products) consumers. But in the majority of cases the existing capacities are being utilized unsatisfactorily. It is known that assignments for rendering production services are established on the basis of the availability of existing and expected startup of new capacities. But in a considerable number of territorial administrations these are not being carried out. According to the most modest calculations, the capacities of shops and sections in the USSR Gossnab as a whole under the 11th Five-Year Plan were underloaded by from 11 to 33 percent. The volumes of services in the USSR Gossnab as a whole could be increased by 18-20 percent just as a result of eliminating the extremely irregular loading of capacities of shops and sections of enterprises for delivering products in the various months.

This work must be done by specialists with high qualifications. Therefore it is necessary to think about creating centers for training such specialists.

The changeover from supplying consumers with "raw" materials to products with a higher degree of technological readiness requires a radical change in the nature of the activity of supply and sales enterprises. We are speaking about a reorganization that corresponds to the modern level of industrial culture. If up to this point the consumers were forced to adapt production to supply, now the activity of supply and sales enterprises should, to a maximum degree, be "custom-made" for the technology and production organization of the consumers.

An analysis of the effectiveness of services for preparing products for industrial consumption rendered by supply and sales organizations shows that the amounts of savings from this kind of activity in practice are considerably less than they could be with correct organization of the work. In order to provide for obtaining the maximum possible effect from rendering production services, it is necessary first and foremost to reorient the territorial administrations toward working with small consumers. Then it is necessary to envision supplying shops and sections with services with highly productive equipment and better technology for processing products. So far not a single enterprise has special technological services, without which it is impossible to provide for optimization of the cutting of materials. If orders are combined when preparing products for industrial consumption, it is done extremely rarely. This combination does not always provide for optimal

cutting of materials. The prevalence of small individual orders in and of itself makes it problematic to apply production lines and other analogous equipment at enterprises of the supply branch. Here one needs flexibly adjusted and rapidly readjusted, highly productive equipment.

At enterprises and in organizations of the material and technical supply system it is necessary to have special technological services which should engage in preparing the optimal cutting and trimming of materials and providing technical monitoring of the quality of the products that are produced and the work that is performed.

#### FOOTNOTE

1. But even these figures in no way satisfy the practical workers. They are insignificantly small as compared to the need--Editor.

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## PRODUCTION SERVICE OPERATIONS REPORTED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 102-103

[Article by A. N. Leontyev, deputy chief of the Murmanskglavsnab Main Board: "Production Services in Murmanskglavsnab"]

[Text] Enterprises of Murmanskglavsnab now offer the consumers more than 30 kinds of industrial services. In 1983 in the Monchegorsk Administration for Production-Technical Batching a section for metal services began to operate, which made it possible to reduce deliveries of any kind of rolled metal to construction sites of the Kolstroy Trust. Everything needed at the construction site is manufactured in the shop according to weekly and daily schedules or on one-time orders from various organizations. The existing equipment makes it possible to make cuts for the sizes of any profile of rolled metal or sheet steel, to drill, to cut threads, to manufacture anchor bolts, to weld applied parts or to manufacture form shields.

There is a demand for the manufacture of packages for insulating panels, cutting slate for balcony railings, assembling shovels and sledgehammers, fitting sewn items and so forth. The unique feature of the system of services consists in that the selection of services is not constant. With time the consumers' need for one kind disappears and another appears. For one reason or another they have stopped services for cutting and batching floorboards, and items for chemical protection and heat insulation. New kinds of services appeared in 1985: putting tires on state passenger vehicles, manufacturing plasterboard for walls and ceilings.

In the development of services it is important to take the time factor into account. They must be developed quickly, providing the consumers with high-quality services so that they will be confident of the reliability of their partner. Losses of time lead to parallel development of sections for preparing products by the suppliers and the consumers. And as a result the capital investments intended for these purposes are not used properly. This is what happened with our trimming and cutting of reinforcement bars. While the section was being designed and constructed, many enterprises, especially in the construction industry, already developed their own fairly large productions and the demand for these kinds of services had declined. Obviously, when designing shops and sections it is necessary to include

flexible technological systems so that there will be a possibility of readjusting quickly with minimum capital expenditures.

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## CABLE AND WIRE SERVICES DISCUSSED

Novosibirsk EKONOMIKA I ORGANIZATSIIA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 104-105

[Article by V. S. Kuskin, general director of the Lenkomplektooborudovaniye Association, and V. N. Goloshchapov, candidate of economic sciences (Leningrad): "Services for Preparing Cable and Wire Products in Leningrad"]

[Text] In 1985 specialists of the association conducted a detailed study of the demand and the organizations of the region for developing new kinds of services. Taking into account the information that was obtained, the association considers it expedient under the 12th Five-Year Plan to introduce: cutting of cable products in measured length on orders from the consumers; selecting cable and wire products according to colors for further utilization by consumers when batching prepared products; finishing the ends of cable products when released to the consumers using funds that have been allotted for no less than one package position; determining the quality of products prepared for industrial consumption; packaging them; storing wooden and metal industrial containers and repairing them.

It will probably not be necessary to develop the entire complex of aforementioned services in every rayon. The selection of the primary kinds and the planning of the volumes of work for each of them must be done strictly according to the apparent demand of the consumers. We wish to focus attention on this problem. The fact is that, as has been shown by repeated investigations, questionnaires and also existing experience, until recently many enterprises and organizations have not been interested in taking advantage of the services of supply and sales organizations, since they either have their own metallurgical shops and sections, or they are trying to create and develop them. In this connection it is necessary to develop and introduce effective economic levers which would motivate the consumers to be more willing to turn to territorial agencies of the USSR Gossnab regarding these problems.

At the same time it is necessary to work out the existing policy for economic incentives for the supply and sales agencies themselves and motivate them to accelerate the development of services for preparing products that are delivered for industrial consumption, making the payment of bonuses to workers of shops and sections that render these production services directly dependent

on the degree of difficulty of the plan they adopt, the level of their fulfillment and the quality of the service to the consumers.

It is also necessary to have a closer coordination of plans for the development of services and capital investments allotted for these purposes for the construction of production shops and sections, the wage fund, limits on the number of personnel and so forth. In our opinion, only with a comprehensive solution to all these problems will it be possible to give the "green light" to the development of services for preparing products for industrial consumption in the system of the USSR Gosnab.

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## SUPPLIER SERVICE PERFORMANCE ANALYZED

Novosibirsk EKONOMIKA I ORGANIZATSIIA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 107-111

[Article by I. Ye. Sonin, candidate of economic sciences, Scientific Research Institute of Material and Technical Supply of the USSR Gosnab (Moscow): "Discipline and Initiative of the Supplier"]

[Text] Against the background of the dynamic changes taking place in the country recently, the organization of recycling of means of production, mainly in the stage of their sales, stands out in contrast. Its style is distinguished by an inertia that has become traditional, frequently bordering on indifference to the quality of material supply. We are speaking primarily about 45,000 manufacturers who organize and carry out the delivery of 25 million kinds of industrial items with specific consumer qualities. They do this within the framework of approximately 500,000 grouped kinds of products, for which supply and sales agencies form economic ties with hundreds of thousands of consumers. In order to unite the cost accounting interests of the producers and consumers and, in the final analysis, to satisfy national economic interests, significant economic and organizational steps have been taken which motivate the producer to pay attention to the consumer.

In our opinion it would be expedient to change the organization of economic ties for deliveries. One of the possible ways is the following schema. The output of products of the same kind will be assigned to several enterprises. The enterprise is given planned assignments for selling products in a consolidated products list on the basis of maximum utilization of production capacities. Supply and sales agencies provide the manufacturer with orders and attachment plans with a loading of production capacities by 90-95 percent. Material resources are centrally allotted only for these orders. The portfolio of orders for loading the free capacities is formed by the manufacturers themselves. The point of reference is the list submitted by the supply agencies of nonattached consumers. These agencies also inform nonattached consumers about suppliers who have free capacities. These consumers can be research institutions, experimental enterprises and other enterprises with an unstable list of products that are produced and materials that are used. While coordinating with the suppliers the materials they need the consumers submit funds for materials along with these orders as is done today with agreements for deliveries through production cooperation.

When the nonplanned demand for the products of the best supplier exceeds the supply of the latter, his workers should be materially motivated to fill additional orders through utilizing production reserves, including the shift work for the operation of equipment. To do this one can use additional deductions into the incentive funds from the profit obtained from above-plan sales. Noncompetitive suppliers, having been unable to fulfill the portfolio of orders, are forced to catch up to the prestigious enterprises. As a result, real prerequisites will be created for the competition of suppliers, not only in efficient satisfaction of the demand of bearers of technical progress and reliability of deliveries, but also in product quality. First of all, this measure is necessary for branches that produce instruments, electronic equipment, construction materials, and objects for industrial cooperation.

In order for nonplanned orders to correspond to the real needs of the clients, it is expedient to establish material incentives for managers and the supply staff to reduce above-normative supplies. These economic measures can be analogous to the ones taken when the manufacturers fail to fulfill contractual commitments for the delivery of prepared products.

It is obviously necessary to use initiative in developing delivery methods not only for the manufacturers but also for the supply organizations. A change in economic thinking, the mobility of technical equipment and technology in all spheres of public production have had an extremely insignificant impact on the psychology of the supply subdivisions that serve them. More than a thousand interbranch and branch supply and sales associations, administrations and offices are continuing to provide for the consumers with the traditional conservative system: annual orders, funds, and the dispatch from the warehouses as the commodity supplies become available. A request to change the position of metal or a bearing that is not envisioned by the planned order is looked on with suspicion at best. When searching for an instrument that is not available in the warehouse, a worker from the enterprise is dispatched, but not a representative of the intermediary. Instead of the basic functional services, the mine, the kolkhoz or the school in rendering assistance (in Dal's dictionary "service" is a synonym with "assistance") for satisfying an extraordinary material need they prefer services for cutting metal, paper and cable. Administratively control, particularly the prohibited but unavoidable exchanges of materials among enterprises, has crowded out the rendering of broad commercial services also for selling surpluses of raw material and other items. These surpluses could become sources for satisfying nonplanned orders and eliminating the shortage, which was the work of dozens of specialized enterprises during the 1930's. Now their number has been unjustifiably decreased to 9.

The position of scientific institutions is especially unenviable and intolerable. As a rule, they are not in a position to predict the demand for resources and therefore they must distribute them on the spot and fulfill their orders for standardized and new materials, batching items and semimanufactured products. The proportion of the latter in the overall volume of resources consumed by science exceeds 80 percent.

In several centers where scientific subdivisions are concentrated, the USSR Gosnab has created supply organizations that specialize in supplying science. But even there the scientific research institutes, design bureaus, planning organizations and higher educational institutions continue to receive a large proportion of their materials through other channels. Calculations of the Leningrad subdivision of the Institute of Material and Technical Supply, using the example of 27 scientific research institutions, show that they receive up to 85 percent of their material values through direct contacts with other scientific research institutes, supply organizations and also manufacturers. Selective investigations show that no less than 60 percent of the workers of the services for supplying scientific and training institutions are practical workers who have worked in these services for no more than 2 years. Therefore the developers themselves must handle the supply not only of materials with complicated designs, but also ordinary materials. Naturally, this is reflected in the quality and time periods for performing the basic work.

A solution can be seen in the expansion of specialized organizations for supplying scientific research institutes, scientific production associations and other scientific formations as well as in a radical change in the tasks and methods of the activity of these organizations. Under the conditions of the development of wholesale trade in means of production, their task could be not supply, but guaranteed provision. The method of operation of these enterprises should be based on an enterprising search for the necessary products or their manufacturers, including material support for their production and delivery to the client in minimum time periods. The basic rule should be not waiting for the client "behind the counter" but offering him services.

Under the conditions of the development of international socialist scientific-technical and scientific-production integration and domestic branch scientific production complexes, specialized supply subdivisions could take responsibility for serving all participants of the Soviet part of international and even domestic scientific and technical formations. It is also crucial to have cooperation among supply organizations of socialist countries when implementing the comprehensive program for scientific and technical progress within the framework of the CEMA. A great advantage could also be produced by interstate leasing of scientific equipment, which is developing intensively in the USSR Gosnab system. All these measures will make it possible to synchronize the process of supply for each program and, consequently, to accelerate their implementation.

The activation and mobility of supply organizations and, in the final analysis, improvement of the quality of material supply are unthinkable without changing the indicators for evaluation and the conditions for stimulation of supply activity. This variant is also being suggested. The fulfillment of planned deliveries would continue in the future to be measured by the degree of fulfillment of annual and quarterly contractual commitments. And it would be expedient to establish the price for the filling of nonplanned orders, above all orders from science, depending on the difficulty of the instructions. The measure of complexity should be taken as the degree of qualifications and the time of expenditure of labor of the intermediary. They, in turn, should be conditioned by the degree of innovation, the

technical parameters, the volume of products ordered, their availability or the necessity of manufacturing them, and so forth. Then the payment for the labor of engineers and economists of supply organizations could be piece-rate--determined by the quantity and quality of the implementation of the instructions. It would also be useful to have direct bonuses from clients for workers of the intermediary for high-quality and efficient fulfillment of especially difficult assignments. Only effective organizational and economic measures can radically change the psychology of the supplier--motivate him to act in a nontraditional and self-interested way, searching for any available sources and means of satisfying the dynamic needs of each national economic unit. This was the case in June of that difficult year of 1941. In the Urals they began to assimilate new pipes for Katyush. They were keeping track of the hours. Each day at the small station an express passenger train stopped, in "violation" of the schedule. They attached to it a boxcar with the next batch of pipes. The pipes went from the "wheels" into production.

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## CONFUSION OF SUPPLY SYSTEM NOTED

Novosibirsk EKONOMIKA I ORGANIZATSIIA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 111-116

[Article by S. P. Avdeyev, candidate of economic sciences, Kolomenskiy Zavod Association: "In Search of a Way Out of the Supply Labyrinth"]

[Text] Statistics of past decades irrefutably show that the supplies of means of production in the national economy are growing more rapidly than its volumes. What is the reason? I think it is primarily that, in spite of the immense quantitative and qualitative changes in relations of production, distribution, exchange and consumption of the social product, the forms and methods of circulation of means of production have remained essentially the same over the decades. As before, in material and technical supply there is only one method of funded, essentially "card" distribution of material and technical resources.

The system of material and technical supply cannot react rapidly to the requirements of scientific and technical progress. With the years, with the landslide growth of the list and assortment of means of production, and also the number of economic ties, there has been an irreversible increase in the apparatus of material and technical supply agencies at all levels, its organizational structure has become more complicated, and there has been a growth of information flows in reverse directions. The number of stages of administration is increasing. This leads to a reduction of the performance of specialists.

There is parallelism in the functioning of the state and departmental supply systems. In a number of cases, the funds are allotted by one supply agency and the order schedules are filled out by another, all of them engage in sales as much as they can--and practically nobody is materially responsible for the continuity and completeness of the supply for the consumers. In certain cases, such a practice leads to a situation where individual enterprises and branches fail to fulfill the planned assignments that are set for them. The adjustment of plans which became widespread during the years of the 8th, 9th and 10th Five-Year Plans was not accompanied by a reduction of the material funds allotted to the "searchers" after easier assignments.

The desire for general "accumulation" of resources led to a considerable retardation of the turnover of circulating capital. Just from 1960 through 1980 the gross social product increased by a factor of 3.3 while the supplies increased by a factor of 4.5. This contributes to withdrawing 65 billion rubles from economic circulation during this period [Footnote 1]. The situation was no better under the 11th Five-Year Plan. The task of accelerating the turnover of circulating capital by 2-3 days during the 5 years, which would contribute to releasing several billion rubles from above-normative supplies, was actually not fulfilled. The increase in supplies as before continued to outstrip the increase in production volumes.

What is this? The "fatal" inevitability or the result of the lack of correspondence between the forms of distribution of the social product and the level of the development of productive forces that has been reached? What kind of correspondence can one discuss when the objective nature of sales is replaced by a subjective form of distribution? And the situation is no better with the sales of the distributed product. The responsibility for selling capital since 1966 has been placed on the USSR Gosnab, but actually this is handled by the enterprises themselves, and the all-union production associations, and the material supply administrations of the ministries and departments. In spite of repeated clarifications of the inadmissibility of substitution, party agencies and people's control committees are also drawn into this work. The matter is reaching a point where any request to a higher level regarding interruptions in supplies is accompanied by a counterquestion: Was a representative of the enterprise sent to the supplier responsible for the interruption, in other words, a "pusher," although this practice has repeatedly been condemned?

The structure of material and technical supply has a multichannel organization. The list of distributed products is broken down, as we know, among various departments. Among them are the USSR Gosplan, the USSR Gosnab, interministry, intra-ministry and "intramain board" cooperation, direct ties and decentralized procurements. Even for the experienced worker it is not so simple to trace the path through these supply labyrinths. The interests of efficient organization of supply require that all these questions be concentrated in one center--the USSR Gosnab, especially created organizations that regulate the loading of the production of the suppliers and have at their disposal an ever-increasing material and technical supply base of warehouse, packaging and transportation enterprises, and also enterprises for processing raw materials, shops and, in the future, regional centers for preparing products for industrial consumption. The USSR Gosplan, for example, does not have such capabilities. Moreover, it is precisely the USSR Gosnab that is in a position to organize efficient cooperation, taking into account the territorial principle, and overcoming the departmental, uneconomical approach in this matter.

What method of centralized distribution of material resources should be considered the most expedient at the present time? The answer to this question was given as early as the 23rd CPSU Congress (1966), which recognized the need to bring the preparation of conditions for a gradual changeover to planned distribution of means of production through wholesale trade. This means either large-scale wholesale trade in the form of long-term direct or

indirect economic ties or small-scale wholesale trade through bases, warehouses and stores or territorial supply agencies.

But what has stood in the way of introducing a progressive form of organization of supply on the basis of wholesale trade in practice? In our opinion, first of all there are the theoretically groundless arguments that the conditions for changing over to wholesale trade in means of production are not yet right, that initially it is necessary to "accumulate" the necessary supplies of means of production [Footnote 2], and so forth. For more than 20 years now there has been a process of "accumulation" of resources in its worst variant: immense masses of material and technical funds are growing with an extremely slow or even zero turnover in certain units of the national economy while there is a shortage of the corresponding kinds of resources in others.

Another obstacle to the introduction of methods of wholesale trade in means of production was the irregular mixing and counterposing of the concepts of the plan and the market under socialism, supply and trade, principles of distribution and methods of circulation of means of production. A deep theoretical investigation of the problem of wholesale trade was replaced, in our opinion, by scholastic theorizing and a game of definitions.

This replacement distracted the attention of scientists and business experts from the practical solution to the problem, caused them to tread water and waste time, impeding the development and introduction of progressive foundations in the organization of supply. A critical reproach should be given to the Scientific Research Institute of Material and Technical Supply of the USSR Gosnab which during the many years of its existence did not produce forward-looking developments concerning the improvement of the system of material and technical supply over the long period and research on problems of wholesale trade was generally abandoned after the scientific sector that deals with this subject in the institute was eliminated.

There is now the possibility of determining from the standpoint of our time the practical mistakes in the approach to solving problems of wholesale trade made at the end of the 1960's and the beginning of the 1970's. At that time they began to select a list of commodities that was "allowable" for wholesale trade, which included extremely modest lists of materials that meant nothing to industrial enterprises: bristles for brushes, bottle brushes, paper twine and so forth. Naturally, this could not have the slightest effect on the improvement of the supply system that had been in existence since ancient times. The network of small-scale wholesale stores began to perform functions of funded supply according to long-established traditions, and the business began to develop.

There has been no radical change in the situation even today. Academies of medical and pedagogical sciences, VASKhNIL and the AUCCIU have been changed over to wholesale trade, but not industrial enterprises.

How, in our opinion, should one utilize wholesale trade in the practice of material and technical supply? It is necessary to begin not with the selection of the list of materials for this purpose (of course, with certain substantiated exceptions), but with the amounts of consumption of a given kind

of resources by a specific enterprise. The paradox of the existing system of supply lies in the fact that it does not make a distinction between large and small consumers of materials. Where the enterprise uses hundreds or thousands of units of a given product in single units--one and the same method is established for providing all of them with resources and they all use essentially the same system of accounts, orders, fund notifications, monthly attachment plans, letters for changes, adjustments of funds, and so forth.

But, as a rule, 70 to 90 percent of almost any material is used by 10-15 percent of the consumers, and sometimes even fewer of them. And the remaining 20-30 percent go for satisfying the needs of thousands of consumers. And these thousands which make no difference in the overall balance of distribution of the final product, it seems, should be the first to be shifted over to supply through wholesale trade.

Could this path to solving the problem shake the foundations of planned supply? Of course not. After all, the scale, proportions and areas of consumption of one material or another are known to the material and technical supply agencies. This means that there can be a completely objective basis for approaching the establishment of proportions of the shipment of material and technical resources to a specific region, base, warehouse or store. As concerns large consumers that are supplied with particular materials in transit quantities, their supply under the conditions of wholesale trade is based on existing and expanding long-term and direct economic ties which are the basis for large-scale wholesale trade.

At the consumer enterprises themselves, the provision for production should rely on a system of complete cost-accounting. The enterprise must establish the limit of consumption of material resources expressed in physical and monetary terms in the technical and industrial financial plan. It is quite capable of independently controlling its effective demand, not storing up surplus, and promptly getting rid of what is unnecessary. If they have invested above-plan money in metal, they will be left without timber materials or batching items. If they have acquired surplus construction materials, they will have nothing with which to pay for chemicals. This is the way it should be. But with the current functioning of the system of material and technical supply, the practical role of the enterprise's technical and industrial financial plan is reduced to zero. Supply workers do not even look at it.

Wholesale trade in means of production requires the introduction of a flexible price mechanism, since this is involved in the solution to the problem of small batch deliveries of products. It is known that the organization of production with minimum readjustments of equipment, which makes it possible to "boost the growth output" is the logical desire of every manufacturing enterprise. At the same time the consumer has a diametrically opposite requirement that ensues from the need to have all the assortment of the given commodity he needs, without allowing above-normative supplies. In order to reconcile these contradictions it is necessary to pay more for small batches of the commodity. This means that the price lists for metal and other material and technical funds for the 12th Five-Year Plan should be developed with a tie (including margins and rebates) not only to the concrete consumer values, but also to the volumes of batches of material that are delivered.

This will become a significant economic lever for the introduction of cost accounting into practice, it will impede above-normative accumulation of resources, and it will solve the problems of small-batch deliveries.

FOOTNOTE

1. Parfenov, V., "At the Junctures," PRAVDA, 11 June 1984.

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## INTRODUCTION OF ECONOMIC EXPERIMENTAL FINDINGS DISCUSSED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 117-127

[Article by A. I. Sadikov, candidate of economic sciences, Institute of Management imeni S. Ordzhonikidze (Moscow): "From Economic Experiments to Improvement of the Economic Mechanism"]

[Text] The All-Union Scientific Conference entitled "The Large-Scale Economic Experiment and Improvement of the Economic Mechanism" which was organized by the USSR Ministry of Higher and Secondary Specialized Education and the All-Union Council of Scientific and Technical Societies (Committee for Problems of Management) and took place in the Institute of Management imeni S. Ordzhonikidze, they considered the most important aspects of the problem of changing over from the large-scale economic experiment to an integrated system of management of the economy that is based on the new economic and organizational conditions of management.

### Evaluation of the Activity of Associations and Enterprises and Cost-Accounting Relations

The chairman of the conference organizing committee, Corresponding Member of the USSR Academy of Sciences P. G. Bunich, in his paper which was devoted to tendencies in the development of the economic mechanism in the modern stage, noted that the root of the problem is the question of evaluating the activity of associations and enterprises.

The logic of the improvement of the economic mechanism leads to a situation where it is necessary to realize in practice the basic criterion for evaluating the activity of branches, associations and enterprises--the criterion of the contribution to fuller satisfaction of national economic needs with the fewest possible expenditures of all kinds of resources.

At the conference they gave many examples of how the growth principle of evaluation that has been applied has placed in first place those collectives which had significant reserves for intensive development and created

difficulties for enterprises and associations that had achieved a high level of effectiveness on an intensive basis. Thus, for example, at individual enterprises of light industry in Belorussia, which had large reserves for growth, the increase in the average monthly earnings of a worker amounted to up to 17 rubles, although in terms of the indicators of effectiveness, including labor productivity, they continued to lag significantly behind the leaders of the branch.

The director of the Scientific Research Financial Institute of the USSR Ministry of Finance, Dr of Economic Sciences G. I. Lushin, singled out three variants of the distribution of profit: the method of deductions from the profit of associations and enterprises according to individual normatives, payment for resources, and tax into the budget. Under the conditions of the large-scale experiment the first variant was used. The second variant links distribution most closely to the results of management. But the third one is the most progressive and consistent with cost accounting. In this connection experiments in self-financing in the Sumy Machine Building Scientific Production Association imeni M. V. Frunze and AvtoVAZ are prototypes of future distribution systems. The Sumy experiment can lead to even more significant results if one includes such a lever, which up to now has practically not been used in a single economic experiment, as granting the association (or enterprise) the right to earn the wage fund, including the tariff part of the wages. Let us assume that the wage fund is formed from the distribution of value created at the enterprise and not on the basis of a base amount of the fund with an adjustment for the increase in indicators, as was the case in the large-scale experiment. Then the entire labor collective of the association becomes like a unified cost-accounting brigade that is interested in improving the final result and, on the basis of this, increasing the wage fund. The above-tariff part of the payment for labor thus can take up a greater proportion than it does at the present time.

It is known that it is impossible to consistently change enterprises and associations over to completed cost accounting without completely including in the management mechanism such regulators as long-term economic normatives which open the way to initiative and creativity of labor collectives. A department chief of the Institute of State and Law of the USSR Academy of Sciences, Corresponding Member of the USSR Academy of Sciences V. V. Laptev, drew attention to the fact that the legal significance of norms and normatives has not yet been established. This, along with the absence of legal guarantees regarding the basic unit of production, makes it possible for the ministries to consider economic normatives mandatory only for the enterprises and associations, not for themselves. This leads to partial adjustments of normatives, prolongs the life of the notorious practice of planning "from the level achieved" and also narrows the independence of the collectives.

V. V. Laptev thinks that in order to achieve real independence of the enterprises and realize the unity of the rights and responsibilities it is necessary to change the very prohibitive form of normative economic documents. The law should prescribe not that which can be done, but that which should be done, leaving everything else to the discretion of the economic organizations. Such an approach will make it possible actually to realize the additional rights, interests and responsibility of the collectives.

As was noted by Dr of Economic Sciences, Deputy Director of the Institute of Economics of the World Socialist System, K. I. Mikulskiy, the process of improving the economic mechanism in socialist countries reveals a number of general tendencies. In Bulgaria they tested the residual result principle of the formation of the wage fund for collectives, in Hungary--the principle of self-financing and limitations of state subsidies, in the GDR--planned organization of the release of labor force and its balance with existing work positions on the basis of concluding "triangular agreements" (the releasing enterprise--the worker--the receiving enterprise) and so forth.

In all the countries the experience that has been accumulated has advanced to the foreground the political and economic aspect of improving management. It is necessary to concretize a number of points of political economics of socialism, particularly to refine the content of the principle of social justice and answer the question of how to combine social guarantees with responsibility and payment for the results of labor.

Participants in the conference actively discussed the question of socialist competition under the new conditions of management. The speakers (particularly the deputy editor in chief of the newspaper SOTSIALISTICHESKAYA INDUSTRIYA, Dr of Economic Sciences V. K. Fedinin) pointed out the significant autonomy of incentives according to the results of competition as compared to the system of economic incentives as a whole. The main thing is to link the practice of socialist competition to cost accounting and all distribution relations, and to realize in the competition the principle of taking advantage of what is available. To do this they must not limit themselves to paying several percentage points from the material incentive fund for the results of socialist competition; rather they should use for this purpose the lion's share of the unified fund for material incentives that is created under the new conditions, granting labor collectives the right on a normative basis to divide up the incentive fund between suppliers and associates, whose actions ensure success. At the same time it is necessary to improve the indicators and the policy for summing up the results of the competition. They should be directed toward accelerating scientific and technical progress, increasing the ability of the products to compete and reducing expenditures.

The conditions of the socialist competition should be such that, in the opinion of Corresponding Member of the USSR Academy of Sciences N. Ya. Petrakov, the judges are not the department of the producer, but the consumer of the product, and he should distribute an appreciable part of the bonus funds. This will be the beginning of competition for how best to satisfy the consumer, a kind of competition which is inadequate today and which, in the final analysis, is required.

#### The Plan--The Most Important Economic Lever

An increase in the effectiveness of planning that is based on reliable value measurements and released from a surplus of physical indicators was at the center of the attention of participants in the conference. It was noted that an important point of the large-scale economic experiment concerning the correspondence of the plan to the completed economic agreements for delivery

of products had not been sufficient; realized since in practice the enterprises first received their planning assignments and then conclude agreements.

Dr of Economic Sciences G. Ya. Kiperman drew attention to the tendency toward increasing the volumes of the products list planned at the higher level of management (Council of Ministers and USSR Gosplan). He gave these facts: While in 1965 the planning of the list of products was reduced from 4,000 to 1,800 positions, by 1985 the number of positions had again increased to 4,000. The ministry's list of planned products increased significantly. The number of indicators directly set for the enterprises was inadmissibly large as before. Thus individual labor collectives were given up to 2,000 directive indicators in the section for acceleration of scientific and technical progress alone.

A situation has taken shape in which new centrally planned positions are being added and the old ones are not being removed. This is what happened with the assignment for producing items made of plastic, with indicators for scientific organization of labor, and so forth. Moreover, the paradox consists in that frequently centralized planning is advantageous for the enterprises and associations since they received better material and technical support for these assignments. For example, without centralized assignments for casting and forging, it would be difficult for machine-building enterprises to count on obtaining molding sand and so forth.

As before, local agencies control the value indicators, which was noted as early as in the decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979 concerning improvement of the economic mechanism. When summing up the results of socialist competition among administrative rayons, the first to be taken into account were indicators of the fulfillment of the plan in terms of the general volume of sales, the rates of growth of commodity output and the fulfillment of the plan in terms of increasing labor productivity calculated on the basis of commodity output.

How in practice can one strengthen centralized planning and increase its effectiveness in the basic areas while at the same time expanding the independence of the enterprises? The opinions of those who spoke mainly amounted to the following.

It is necessary to regulate legislatively the combination of economic agreements and the plan, to legally reinforce the agreement as a unique planning document, to include in the sphere of cost accounting, contractual relations, main union supply and sales administrations and territorial Gosnab agencies, and to practice the conclusion of agreements among ministries and enterprises. This will make it possible to extend the contractual principles to enterprises and management agencies without diminishing the directive nature of planning (this was discussed by V. V. Laptev and other speakers).

On the basis of the formation of all plans there should be "coordinated orders," and not orders from the ministry, but from the consumers. It is naive to think that it is possible to coordinate centrally the production plan and the plan for material and technical supply. Consequently, at the same

time it is necessary to develop wholesale trade and direct and other progressive forms of economic ties (this viewpoint was expressed by Professor of the Kiev Institute of the National Economy V. S. Naydenov and others).

A subdivision chief of the USSR Gosplan, Candidate of Economic Sciences N. S. Novikov noted that planning agencies are paying more attention to the balance of fixed capital and production capacities. Thus while under the 11th Five-Year Plan the USSR Gosplan developed 88 balances of production capacities, under the 12th Five Plan this number increased to 200. The number of balances of material resources is also increasing. A comprehensive evaluation of fixed capital (mainly the active part) was carried out for 37 industrial ministries (as of 1 January 1986). It is also intended to evaluate the technologies that are being applied and develop long-range plans for replacement of equipment and redistribution of capacities that are used by more than 90 percent. For the 12th Five-Plan normative coefficients of shift work of equipment were set for the branches, and the five-year plan will be formed on the basis of these.

#### Prices and the Finance-Credit Mechanism

Although there was no special report on this at the conference, many participants raised the problem of prices in one way or another.

N. Ya. Petrakov: The price setting system must become more flexible. The main thing is to make sure that not only the final consumer, but also the producer of the products experiences the change in the price. Will it really be justified, say, after reducing the retail price of a Niva motor vehicle, to leave the wholesale price at the previous level?

The price is a normative of socially necessary expenditures and is not intended to make reimbursement for any expenditures of individual producers. In practice, however, the latter takes place. G. Ya. Kiperman gave this example. An enterprise that produces the Estoniya-10 radiophonographs asked the State Committee for Prices to reduce (!) the price on it since profitability had reached 350 percent of the price. But it was rejected on the basis that in Leningrad there is an enterprise that manufactures a similar radiophonograph combination with a high production cost that makes it impossible to reduce the price. It is not rare to see cases in which prices for items with a profitability of 70-80 percent are not reduced because there exists (perhaps only one) a less effective producer for whom such a product would be produced at a loss or would not be very profitable.

When discussing financial problems it was noted that in addition to improving economic conditions external to the enterprise it should be granted much more independence in disposing of its own capital that is reinforced by cost accounting. It is necessary to eliminate rigid regulation of rights in the utilization of this capital in order to preclude cases which are encountered in practice where there is no possibility to spend the sums that are earned. There are, incidentally, reverse situations when there are planned expenditures but there are no sources for covering them and the enterprises use circulating capital that is their own or borrowed, and they do this without fear since the existing finance and credit mechanism makes it possible to make expenditures without have the corresponding income.

With 100 percent fulfillment of commitments for deliveries, under the new conditions the labor collective receives an increase in the material incentive fund of 15 percent as compared to the plan. The enterprise should use above-plan profit for this and if it has none, it should use part of the payments for funds or deductions from profit into the budget. Thus we have a disjunction between one of the main evaluation criteria and the source of incentive funds. This shows that cost accounting has still not penetrated through to the essence of the interrelations of the collective and the society; and does not joint together the system of evaluation of activity and self-financing.

With respect to circulating capital, the economic experiment did not lead to a change in the negative tendencies. The period of circulation of capital is increasing and the growth rate of supplies of material values is inadmissibly high. At the enterprises it is first necessary to form circulating capital according to the complete normative and then divide it into their own and borrowed capital, granting the collectives a certain amount of independence in this matter. This approach will become feasible with the development of a unified finance and credit plan at all levels of management. At the same time, the enterprises will no longer be motivated to fight against the lack of coordination of the actions of agencies of the financial and bank systems.

It was emphasized at the conference that financing should become a more effective lever for accelerating scientific and technical progress. The general opinion was that until the enterprises themselves began to earn the funds for conducting the corresponding measures there will be no change in the area of scientific and technical progress. In this connection they expressed a desire for the enterprises to have a unified fund for financing the development of production on the basis of new technical equipment and technology. The possibility of merging the currently existing fund for the development of production (FRP) and the decentralized part of the unified fund for the development of science and technology (YeTRNT) was pointed out by a department chief of the Moscow Institute of Management imeni S. Ordzhonikidze, Professor and Dr of Economic Sciences A. M. Kovalev.

Participants in the conference were in favor of having the fund for the development of production (FRP) and the fund for social and cultural measures and housing construction (PSKM) not only be added on, but also have complete "backing," thus actually influencing the material interests of the collective. During 1984 the electrical equipment industry accumulated more than 100 million rubles of unutilized FRP money and the amount of unutilized PSKM money increased 1.5-fold. A docent at the Kiev Polytechnical Institute, candidate of economic sciences V. Yu. Traskovskiy discussed the fact that certain enterprises of Kiev have accumulated PSKM reach 2 million rubles and more. But the city ispolkom will not allot them either sections of land or a contract construction organization so they cannot infringe upon its own housing construction.

When discussing the problem of credit participation in the conference noted that nonpayment had become a mass phenomenon conditioned by the instability of economic ties and leaning to a growth of circulating capital as well as a

shortage of this. It is typical to use items for other than their intended purpose. Therefore the opinion of the need to increase payment discipline and step up bank activity in this matter was unanimous. But the most varied viewpoints were expressed and disputes arose regarding the ways of solving the problem.

Docent, Candidate of Economic Sciences A. A. Volodin (MIU imeni S. Ordzhonikidze) suggested introducing commercial credit into practice in order to eliminate the influence of nonpayment on the actual financial condition of the economic partner and at the same time to avoid automatic granting of credit. A buyer who was not able to pay would sign a note to the bank with a commitment to pay 5-6 percent on it. The supplier would be given the corresponding funds through the bank. Commercial credit has not existed before. It was abolished in 1930, and at that time it was justified. At the present time the task of intensification requires a cost-accounting approach to financing and credit. Commercial credit provides such an approach.

Docent, Candidate of Economic Sciences L. Ya. Osipovich (MIU imeni S. Ordzhonikidze) had a different opinion: commercial credit is essentially no different from payment credit and it does not change the situation. In order to differentiate enterprises according to the degree of fulfillment of payment commitments it is necessary to have a regular calendar sequence of payments (including payment of wages, payment into the budget and so forth) while retaining payment credit. This is especially important in light of the decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1985, "On Extensive Dissemination of New Methods of Management and Strengthening Their Influence on the Acceleration of Scientific and Technical Progress," according to which it is intended to make reimbursement for expenditures on correcting defects on products using the supplier's material incentive fund.

#### Economic Ties, Organizational Forms and Structures of Management

The economic experiment has revealed the need for changes in the organizational structure of branch management. A division chief of the All-Union Scientific Research Institute of System Research (VNIISI) Candidate of Jurisprudence V. D. Rudashevskiy singled out the following significant problems: the unsatisfactory functioning of horizontal ties at the level of the basic unit of production and the overloading of branch and functional management agencies with operational tasks. According to data of a special investigation conducted by the VNIISI, the volume of document turnover during the course of the large-scale economic experiment increased by a factor of 1.5-2.

It is typical to have a duplication of functions by various management agencies. Thus the main boards and the all-union production associations reproduce the functions of ministries, and the ministries continue to duplicate the functions of the union main supply and sales administrations in questions of batching, although as early as 1965 the union main supply and sales administrations were transferred to the Gosnab. In order to eliminate duplication it is necessary to create an integrated organizational structure of management that is based not on the existing formal-legal competence, but

on the objectively necessary economic competence that is inherent in one unit or another. Participants in the conference noted that it is also necessary to partially transfer general functions of management from branch to territorial agencies and to narrow the realms of competence of the ministries.

The chief of the planning and economics administration of the Ministry of the Electrical Equipment Industry, Dr of Economic Sciences V. Ye. Astafyev discussed the work being conducted by the USSR Ministry of the Electrical Equipment Industry and the sphere of rearranging the organizational structure. Thus it was decided actually to expand the rights of enterprises in the area of planning, distribution and sales of products and to change them over basically to direct ties, having refrained from issuing funds and orders to material and technical supply agencies. The largest associations and enterprises, which account for up to 20 percent of the products produced by the branch, will be directly under the jurisdiction of functional administrations of the ministry, that is, they will be changed over to a two-unit system of management.

At the same time, functions will be redistributed within the ministry staff. The main boards will handle problems of scientific and technical progress and construction, plan economic indicators and monitor their fulfillment. The rest of the functions, including financing, material and technical supply and others, will be centralized in the ministry. By the end of the 12th Five-Year Plan it is intended to change over completely to a two-unit system of management.

V. V. Laptev drew attention to the fact that property liability relations have largely been excluded from today's system of economic incentives; they have almost completely given way under the pressure of the specially designed indicator of deliveries. Yet property sanctions are quite necessary in order to achieve the program goal--consistent changeover of enterprises and associations to complete cost accounting. Material liability measures are separated from the amount of harm that is caused and reduced by a factor of 10 or more for all participants in the reproduction cycle, including construction, transportation, supply and other organizations.

Forms of material liability are also necessary for management agencies. Thus, for example, it is a typical case when the ministry gives an instruction to dispatch a product and then the enterprise pays for dispatching it without the necessary funds. Thus the entire economic-legal mechanism of management ties is in need of radical improvement. In parallel it is necessary to create a legal mechanism that guarantees the enterprise its rights and reimbursement of damage. The central unit of this mechanism should be the state arbitration board which would not only resolve the disputes that arise, but it would also check to make sure of the legality of departmental normative acts and instructions.

In the statement by Candidate of Economic Sciences V. A. Savin (All-Union Scientific Research Marketing Institute of the USSR Ministry of Foreign Trade) attention was drawn to the strengthening of economic ties and increased responsibility in interrelations between industrial and foreign trade organizations on the basis of the participation of the enterprises in the

profits and losses from foreign trade operations. There apparently is not other way of solving the problem of increasing the effectiveness of exports and imports.

The Deputy Director of the Scientific Research Institute under the USSR Gossnab, Dr of Economic Sciences, Professor S. N. Voronin spoke out in favor of increasing the role of territorial Gossnab agencies, which would coordinate all material and technical supply (MTS) in the region and he was also in favor of creating a unified territorial agency for MTS with the simultaneous elimination of the many channels for the distribution of products.

#### Man in the Management System

The brigade form of labor organization has already encompassed 72 percent of the workers in industry. But there are literally only a few real contract cost accounting brigades that bear full material responsibility, and there are even fewer contract sections. (According to existing statistics, a brigade with a limit of even one position of material expenditures is counted as a cost-accounting brigade.) Yet, as the experience of contract collectives of a number of enterprises of Novosibirsk shows, the rate of increase in labor productivity under the aforementioned new intraproduction conditions is higher than ordinary by a factor of at least 2-2.5. Consequently, it is necessary to accelerate the work for extending the principles of the contract, including to higher levels of management than the section.

Hero of Socialist Labor, Chairman of the All-Union Council of Construction Brigade Leaders, V. P. Serikov, emphasized that the contract begins with the creation of like thinkers, before whom formalism and showiness--the worst enemies of everything new--are powerless. The brigade is an extremely democratic form of socialist self-management and this is reflected particularly in the fact that the above-tariff part of the income is distributed by an elected council of the brigade in keeping with the coefficient of labor participation. The question of including engineering and technical personnel in them should also be resolved independently by the brigade, based exclusively on economic expediency. If the decision is positive it will be necessary to create their own fund according to normatives from the final result for incentives for engineering and technical personnel so that their earnings will not increase automatically because of fact that they are included in the brigade.

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## METAL RECYCLING POLICY DISCUSSED

Novosibirsk EKONOMIKA I ORGANIZATSIIA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 128-133

[Article by R. M. Khayrulin, leader of the economics group of the Central Scientific Research Institute of Ferrous Metallurgy" (Moscow): "A Second Life for Metal"]

[Text] The largest reserve for economizing on metal is complete utilization of commercial scraps. In ferrous metallurgy these include, first, metal products that are completely usable but are the wrong size. These include steel wire, cable, bands and strips in small bundles or coils; pipes and various profiles of high-grade rolled metal of a shorter length than stipulated by the standards and technical specifications, and also thick and thin (hot and cold rolled) sheet steel of irregular sizes. In essence, these are not even waste, but specific small products which require only a more attentive attitude.

Second, these include substandard products which have certain properties that do not meet all of the requirements for metal of the highest quality and for a specific purpose. A third group of commercial wastes is represented by relatively large cuts of sheet steel with an area of no less than 0.5 square meters, rolls and strips that are more than 50 millimeters wide, high-grade rolled metal and pipes with profiles from 0.5 to 1 meter, steel strips and wire.

Commercial wastes of the first and second groups have already been widely used for manufacturing consumer goods and technical items both for ferrous metallurgy itself and outside the industry. They are distributed through funds of Soyuzglavmetall and are sold directly through agreements with the consumers. Bringing them into national economic circulation requires neither capital investments nor restructuring of production. Wastes of the third group require more careful sorting and, as a rule, processing into items or semi-manufactured products directly at metallurgical enterprises.

At the Magnitogorsk Calibration Plant (MKZ) about 7,400 tons of commercial wastes are used for producing goods and items each year, and another 2,510 tons are released to Soyuzglavmetall for centralized distribution to consumers, and 670 tons are sold to enterprises of local industry under

contracts. In the final analysis, all commercial wastes of the first and second groups at this plant are drawn into national economic circulation.

The plant's need for metal for producing consumer goods and items (metal toys, metal haberdashery, tow chains and so forth) is covered by 92.2 percent through commercial wastes of wire, cable, calibration profiles and steel strips. The figures show how advantageous this is. Because of the use of an inexpensive substitute (with an average price of 83.9 rubles per ton as compared to 225 rubles per ton for standard metal) the profitability of the products was high--26.3 percent of the production cost. The sale of commercial scraps on the side and their release to the procurement workers is also advantageous since their price is 2.5 times greater than for that which goes for remelting, and sorting expenditures do not exceed 1-2 rubles/ton.

The high effectiveness of using commercial scraps in production is also shown by the following comparison. At the Magnitogorsk Scrap Metal-Metallurgical Plant (MMMZ) there is a large modern production of items made from standard metal (overall volume--245 million rubles per year). The capital availability and labor productivity are higher there than in the shop for consumer goods by factors of 3.4 and 3.2, respectively. But in spite of this difference in the technical level, the profitability of producing consumer goods from commercial scraps turns out to be higher. The decisive factor is the low cost--the price of commercial scrap metal is 69 rubles per ton as compared to 167.6 rubles per tons for standard metal. The MMMZ has the largest production of consumer goods in the subbranch. It is completely based on the utilization of commercial scraps of wire and rolled wire. Under the 11th Five-Year Plan it again increased by a factor 1.4 as compared to the 10th Five-Year Plan.

Resources of commercial wastes are being utilized effectively at a number of other plants--the Southern Pipe Plant, the Moscow Plant and especially Lentrubostal, where the output of commercial wastes of the third group has been increased to 74.4 percent of the overall mass of scraps. Some of them fully provide for the production of consumer goods at Lentrubostal (waterin, equipment, fence posts, and so forth) and the rest are sent to the neighboring casting mechanics plant of the RSFSR Ministry of Municipal Services for Manufacturing Pipe Joints--Fittings.

The method of manufacturing fittings by electrohydraulic stamping that was developed at the Leningrad Polytechnical Institute has exceptionally high indicators. The coefficient of utilization of metal increases by 30 percent as compared to the production of these parts by the methods of forging and mechanical processing, and labor-intensiveness decreases by a factor of 8.

When evaluating the national economic effectiveness of this area of the use of commercial scraps of pipe one should take into account not only the improvement of the economics of enterprises of ferrous metallurgy, construction and municipal services, but also the reduction of shipments and losses of scraps. According to planning developments of Ukrigipromez, capital investments in the construction of a shop for producing bent branch pipes and pipe joints (T-pipes and crosspipes) from commercial scraps of steel pipes are estimated at little more than 6 million rubles. The time for recouping the capital investment is 1.6 years and profitability of the products--36 percent.

The main factor on which effective use of commercial scraps depends is undoubtedly the initiative, enterprising and businesslike attitude toward metal on the part of managers and collectives of enterprises. Thus at the Kuznetsk Metallurgical Combine (KMK) even with an unfavorable assortment of products as compared to other enterprises of the branch, output of commercial scraps is 7.2 percent of all the scrap pieces, and on the thick sheet rolling mill 500, the output is 40 percent (the record level for the branch).

The KMK was also the first in the branch to use scrap pieces of rails and girder profiles to organize the manufacture of metal cross-ties (for casting or slag yards of metallurgical shops and enterprises where the enforced concrete cross-ties wear out quickly). In the shop for rolling rail reinforcements the KMK uses nearly all scraps as commercial scraps (for manufacturing grinding equipment for the cement industry). Thus in this shop the coefficient of utilization of the metal is raised to 97.4 percent. This is the first large production in the branch that is practically waste-free.

The combine has developed an effective method of using commercial scraps of thick sheet steel. It is used on the presses to cut inserts for reinforced concrete elements (up to 5,000 tons per year). Construction and installation organizations of the country use for cutting these inserts girders, columns, wall panels and so forth, amounting to hundreds of thousands of tons of standard sheet steel. Taking advantage of the experience of the KMK and the Western Siberian Metallurgical Combine in Novokuznetsk and organizing the production of inserts for reinforced concrete elements directly at metallurgical enterprises and neighboring metal bases of the USSR Gosznam system would be a solution of great national economic significance. According to data of Ukrugipromez, the construction of a shop for an annual production of 24,000 tons of inserts for reinforced concrete elements made of commercial scraps of thick sheet steel would cost 1.9 million rubles. The time period for recouping capital investments would be 1.5 years and the coefficient of the utilization of metal--74 percent.

It would be extremely expedient to create a network of regional comprehensive shops for metal items--they could produce inserts for reinforced concrete elements, cut off blank pieces and parts for metal processing and machine building enterprises, and flanges for sanitary and technical organizations.

High profitability is achieved by using commercial scraps in the production of spare parts for passenger automobiles and container items for agricultural procurement organizations. On the whole the profitability of production of products with partial or complete use of commercial scraps in the branch amount to 27 percent (in all cases it is significantly higher than with the application of standard metal alone).

Almost all enterprises of the branch are experiencing great difficulties in retaining personnel and the consumer goods shops, mainly because of the significantly lower wages as compared to metallurgical production. The utilization of commercial scraps will make it possible to reduce the difference in the wages as a result of bonuses. The attractiveness of the labor in shops and divisions for consumer goods and technical items is

increasing. After all, as we know, at enterprises that produce goods and items more than 50 percent of which are made from wastes, a consumer fund is formed. All the profit from sales of products with profitability up to 25 percent is included in the consumer fund and half of the profit from the sale of products with profitability in excess of 25 percent is included in this fund. Since the beginning of 1982 60 percent of this fund has gone for expanding production and in improving the quality of goods and items, and also for the construction and repair of residential buildings; 35 percent has gone for awarding bonuses for personnel of enterprises directly participating in the output of the goods and items (regardless of the fulfillment of other planning indicators), and 5 percent has gone into the fund of the ministries and departments.

According to the provisions that are in effect, the utilization and sale of commercial scraps count for the enterprises in the fulfillment of the plan for the release of scrap metal and waste ferrous metallurgy for remelting. Thus, legal and economic prerequisites and stimuli have been created for maximum utilization of secondary resources. Still, in the branch as a whole only 13 percent of the commercial scraps have been drawn into the production of consumer goods and technical items. At metallurgical plants this indicator is 11.7 percent and at pipe plants--18.5 percent, while at scrap metal plants it is considerably higher--50.8 percent.

Commercial scraps are used in the production of more than 140 kinds of consumer goods in the branch, but this covers no more than 20-25 percent of the overall need for metal in terms of mass.

The utilization of commercial scraps will help to satisfy the repair and national needs of the enterprises of the Ministry of Ferrous Metallurgy themselves. Yet at the present time only 8.5 percent of the commercial scraps of rolled metal and pipe products are used for these purposes in the branch. And of the overall total in the branch, 22.5 percent of the commercial scraps are used and 77.5 percent are now being sent unprocessed outside of ferrous metallurgy. Therefore further improvement of the structure of utilization should be achieved as a result of more complete assimilation of resources and giving priority to bringing them into production in ferrous metallurgy itself. There are great possibilities of this. In 1982 in order to replace standard metal for the all the basic areas, enterprises of the branch used about 1.9 million tons of commercial scrap, in 1983--more than 2.2 million tons, and in 1984--about 2.4 million tons. But the overall resources of large scraps alone have been determined at 3.7 million tons. The economic effect from releasing commercial scraps to procurement organizations and selling them under contract to outside enterprises is less by a factor of 2-3. But these deliveries are also important for the national economy and they should be developed. In the future school training and production centers could become large consumers of commercial metal scraps.

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## WASTES IN METAL CASTING DISCUSSED

Novosibirsk EKONOMIKA I ORGANIZATSIIA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 133-136

[Article by I. N. Frolov, foundry engineer (Barnaul): "Casting Production; Planned Waste"]

[Text] An analysis of the work of foundries and forge shops of Barnaul Machine Building Plants showed that good technical and economic indicators are sometimes achieved as a result of increasing the weight of cast and forge pieces, and these weights are continuing to increase.

The plants have been so attracted by "improving" the technical and economic indicators of the work of metallurgical shops that in the iron foundries they have organized a section of "zero operations." On metal-cutting machines they reduce large allowance for metal processing and semi-processed parts are sent to the mechanics shop for processing and shavings are sent as wastes to the Vtorchermet Base, but the weight of the shavings is included in the weight of the cast pieces. Moreover, in commercial output they include cast pieces that are manufactured for their own technological needs.

These planning devices which are advantageous for the enterprises but harmful to the national economy must be stopped immediately. It is necessary to replace the indicator of the ton of cast pieces with the indicator of the final results of production--tons of parts in net weight. Only this indicator can put everything back in its place, and it will provide incentive for making cast and forge pieces as close as possible to the weight of the final part.

At the Altay Motor Plant (AMZ) the designers are trying to reduce the weight of the motors that are manufactured, but the foundry refuses to cast parts with walls that are 6 millimeters thick, and casts them at 8-10 and even 12 millimeters. As a result, the motors are heavier. In a year about 8,000 tons of metal are expended for this excess weight. They do not use the multiton induction furnace here, on which it is possible to resmelt all the iron shavings that are available at the enterprise instead of purchasing scrap metal and it would be possible to obtain an immense economic effect and release hundreds of railroad cars.

The next problem is the utilization of molding materials. In the foundry of another Barnaul plant for many years in order to obtain 10,000 tons of cast pieces they have used about 20,000 tons of fresh molding materials, mainly molding sand valued at an average of 5 rubles per ton. It takes about 5,000 railroad cars to ship it, with an average payment of 250 rubles per car. One must also add to this payment for services to the plant's railroad shop for delivery of the materials for casting, plus payment for the automotive transportation services for transporting the used molding wastes to the dump. Molding materials are dried out before they are used, which involves burning about 300 tons of fuel oil which is shipped in six tank cars. There is also the operation of the equipment and the labor of the people.

With the existing ancient design of the casting mold and the technology for its manufacture, the expenditure of molding earth ranges from 5-10 tons and more per ton of cast material. Additionally, this immense mass of molding earth requires large expenditures and labor resources. It creates poor sanitary and hygienic conditions in the shop. The dust content in certain sections is several times higher than the norm.

The expenditure of molding earth can and must be immediately reduced several times. After all, a layer of earth with a thickness of no more than 10 millimeters is all that actually "works," being heated to 800 degrees, and the remaining amount of earth was envisioned by our forefathers in order to keep the molten metal in the mold. And this ancient design of a casting mold has not changed for many centuries, even though its manufacture has been mechanized and even partially automated.

There are advanced technologies for casting and molding, for example centrifugal casting. Since 1955 the foundry has used this method to cast in an earthen shell mold small parts that are gathered for casting in a stack. The expenditure of earth is reduced by a factor of 5-10 as compared to the usual method--about 1 ton per ton of cast pieces. The savings on molding earth in a year will be tantamount not to 20 days of work, but to many months. This multioperational and reduced-cost technology is capable of reducing expenditures at least by half, improving the quality of the metal, increasing labor productivity, and eliminating many operations from the production of parts.

Now four productions participate in manufacture of forged pieces in the technological chain before the final stage ready: in the foundry they cast the ingots, in the rolling shop--they roll it, in the forging shop--they manufacture forged pieces, and in the machine shop--they process the forged pieces on machine tools until the final stage. Materials, energy and labor resources are expended in each stage. This wastefulness could be eliminated by the technology of centrifugal casting, in which two productions participate. At the foundry the task is casting of the part, which needs no mechanical processing, on the unskilled services and the minimum allowances are taken for mechanical processing of the machined surfaces the cast piece is processed into the prepared part. The utilization of metal increases to 80-90 percent, and out of a ton of smelted metal 800-900 kilograms are put to use. The TsNIITMASH has thoroughly investigated this technology for centrifugal casting, made experimental casting of parts weighing from several kilograms

to 3 tons, and published the results of the investigation in a monograph [Footnote 1]. As an experiment we were permitted to use this method to cast a steel flange and an iron half-coupling. Previously the flange with a net weight of 31 kilograms was manufactured by forging, and the weight of the forged piece was 87 kilograms. We eliminated the allowances for mechanical processing on unmatched surfaces and, having taken the minimum allowances for matched surfaces, we obtained a centrifugal casting weighing 36 kilograms--51 kilograms less than the forged piece! The production cost of the prepared flange decreased to a fraction of what it was. But with the existing indicator the production cost of a ton of cast pieces using the centrifugal method of casting is more expensive, but the fact that the final product costs a fraction of the previous amount does not interest anybody.

The situation is no better in forging shops. Actually an average of 28 percent of the metal is used for the final results of production--the prepared parts. And 720 kilograms per ton go to various weights and irretrievable losses.

When developing new technology not only in the plants, but also in the branch institutes, they do not do an operational cost analysis and this leads to a pathetic result. For example, the Altay Scientific Research Institute of Technology of Machine Building is developing equipment and technology for precision casting and powder metallurgy for the AMZ and other plants. But the utilization of metal in the final parts at the AMZ amounted to 36.6 percent. This is the same as with the traditional technology. And the production cost of a ton of metal is 1,466 rubles--more than the production cost of casting using the traditional technology.

The introduction of the indicator of the final results of production--parts in net weight and weight according to the blueprint--will stimulate bringing the cast and forged pieces closer in form and weight to the final part and will make it impossible to falsely increase expenditures. For the weight of a part is indicated in the official document--the blueprint! It will be impossible to have any deviations in the direction of artificially improving the technical and economic indicators of the work of the shops.

#### FOOTNOTE

1. Yudin, S. B., "Tsentrrobezhnoye litye" [Centrifugal Casting], Moscow, "Mashinostroyeniye", 1972.

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## READERS' VIEWS ON CONSUMER PRICES REPORTED

Novosibirsk EKONOMIKA I ORGANIZATSIIA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian № 12, Dec 86 pp 137-142

[Survey of readers' letters: "Around the Problem of Consumer Prices"]

[Text] In EKO 1 for 1986 as a discussion we published an article by Professor D. M. Kazakevich, "Toward Improving Consumer Prices." It suggested regulating the system of consumer prices, bringing prices of all objects of consumption and services for the population closer to the socially necessary expenditures for their production. In particular, in order to improve the structure of prices and eliminate distortions in price setting, it was suggested that prices for meat and dairy products be increased and subsidies from the state budget for the lack of correspondence between procurement and retail prices be eliminated. It also discussed the expediency of simultaneously bringing the prices of bread and flour and groat items in line with the prices of animal husbandry products. It was also suggested that the subsidy for housing be eliminated, having increased apartment rent in the state housing supply and differentiated it, depending on the quality of the housing. D. M. Kazakevich's article substantiated the possibility of increasing retail prices and apartment rent without reducing the real incomes of most of the population, through using the released subsidy funds for increasing wages, pensions and stipends and for rendering material assistance through local soviets to families with many children and a low per capita income for payment for housing. In the author's opinion, all these measures would contribute to achieving a balance in the market for consumer goods and services and, in the final analysis, accelerating socioeconomic development.

The article evoked a great deal of interest from our readers. Some of them sent a developed presentation of their opinions to the editorial staff.

We shall begin the survey of the letters we received with the most zealous objections to the magazine article. N. N. Pototskiy from Kayerkan in Krasnoyarsk Kray, R. B. Radushkevich from Podolsk in Moscow Oblast, and Engineer T. G. Sakhno from Dnepropetrovsk write about the possibility of negative social consequences, speculative growth of prices and violations of principles of social justice.

"Increasing the prices of food products--with their stable and low level throughout almost all of postwar history, of which we have been justifiably proud--will cause objections from a considerable proportion of the population and loud applause from our enemies abroad," thinks R. B. Radushkevich.

T. G. Sakhno sympathized by R. B. Radushkevich's misgivings. "Yes, of course," he writes, "this barbarian attitude toward bread is an ugly manifestation of our life. But why must everyone suffer because of individual people? Along with the increase in the prices for food products there will be an increase in the cost of meals in dining rooms, including in student dining rooms. But what kind of an increase in stipends can the students count on then? And it is not just the prices themselves that are to blame for the fact that many judge the value of the commodity according to its price, but expenses of education; it is not on the proper level here, but this requires a separate discussion."

The aforementioned readers are unanimously in favor of another way of bringing production outlays and retail prices closer together--reducing production outlays. In the opinion of N. I. Pototskiy, increasing retail prices can lead to a situation where various organizations involved in the satisfaction of the needs for food, "will completely stop catching mice." It is necessary to make everyone work better, plan skillfully, invent and lead, and then it will not be necessary to increase prices. Increasing prices will open up the way for unscrupulous executives who increase expenditures on production--adds T. G. Sakhno. We must not encourage inefficiency--this is how R. B. Radushkevich sums it all up.

This argument--that it is necessary to use other measures to bring production outlays and prices closer together--is actively used by another group of readers who in principle approve of the statement of the problem in the article by D. M. Kazakevich, but make critical remarks about it. They include the engineers A. A. Danilov from Leningrad and N. N. Ivanov from Moscow, a professor of the Kabarovsk Faculty of the All-Union Legal Correspondence Institute, Yu. V. Kachanovskiy, Candidate of Economic Sciences V. B. Furtsev from Moscow, and a junior scientific associate from Novosibirsk, E. V. Ogryzko.

A. A. Danilov agrees with the words of D. M. Kazakevich concerning the need to reduce outlays and increase production, and he thinks this is the main and perhaps even the only way of solving the problem. His idea is taken up by N. B. Kuzmichev: "The actually existing expenditures on the production of certain kinds of food products are formed under conditions of unjustifiably low effectiveness of agricultural production, transportation, storage and processing of these products, with large losses in various stages of their life cycle. These expenditures cannot be considered socially necessary."

"The disparity between the effective demand of the population and the mass of consumer goods that are produced which has been formed over the years," writes N. N. Ivanov, "is brought about the inadequate mass of consumer goods produced by industry. If balance of supply and demand leads to a reduction of the effective demand of the population for meat, dairy and bread products, this balance is not what we need."

In the words of K. V. Ogryzko, the idea of increasing prices for bread expresses the alarm and concern of broad segments of the population with the deterioration of the quality of bread and other necessities. The author of this letter compares two methods of increasing real incomes: reducing prices with stable wages and increasing wages with constant prices. The first method, in his opinion, is better, since the prices will be reduced only in places where labor productivity has increased. Then there will be more interest in practical measures for reducing expenditures, including for necessities. Because of the educational role of the ruble, people will have a unique new sense--a sense of the price. Public opinion should be the main regulator, the main judge of consumer prices--thinks the author. Channels will be created for the influence of public opinion on consumer prices and a mechanism will be created which will provide for a link between public opinion and the regulation of consumer prices. The possibility of such a mechanism was prepared for by the development of modern means of information equipment.

Yu. V. Kachanovskiy finds D. M. Kazakevich's article interesting. In the economic aspect the statement of the problem is logical and well-grounded. But it is also necessary to take the social side of this problem into account. The experience of foreign socialist countries cannot be mechanically transferred to our conditions. During the decades of stable low prices for necessities an immense sociopsychological inertia has grown up. It is possible to calculate theoretically the amount and distribution of subsidies, but to do this in practice so that it does not infringe on anyone's interests is difficult or even impossible. Even the smallest infringement on anybody's interests will give rise to satisfaction. One must be extremely careful in these matters.

Candidate of Economic Sciences L. V. Skulskaya (Scientific Research Institute of Price Setting, Moscow) gives interesting results from her calculations concerning the proportion of subsidies on food products in the net income of the food industry and light industry: in 1965 it was 6 percent, 1970--27 percent, 1980--35 percent, and 1983--63 percent. By 1990 it could increase to 87 percent, and by the year 2000 the entire net income of this branch could go to cover subsidies. Consequently, the appearance and growth of subsidies essentially narrows the usual possibilities of accumulation, production and consumption of food products.

Because of the limitedness of meat resources and its varying degrees of availability for acquisition for consumers, the subsidy on meat has weakened the possibility of regulating wages in terms of the quantity and quality of labor. In essence, the subsidy leads to leveling, but a special kind of leveling--depending on the access to food products. According to the calculations of L. V. Skulskaya, funds from subsidies are greater by a factor of 2.5 for every resident of Leningrad than they are for every resident of Balashov.

Still L. V. Skulskaya does not consider it correct to refrain from subsidies. It is not clear how best to compensate various categories of the population for the higher prices. The quality of the food products, for example, of meat, has not yet been brought into line with world standards. An increase in

profit from meat and dairy enterprises would not necessarily lead to a reduction of state subsidies. Instead of abolishing subsidies it is suggested that they be reduced to the optimal level and their payment be shifted from the stage of raw material to the stage of the prepared product, that accounting and control over the utilization of state funds be strengthened, that planning of procurements of livestock be improved, that the new technology for removing the protein from milk developed by the All-Union Scientific Research Institute of Comprehensive Utilization of Dairy Raw Material of the USSR Gosagroprom be introduced.

The next group of readers fully supports D. M. Kazakevich's suggestions. These letters and articles were sent by Engineers V. M. Belyakov from Novosibirsk, V. V. Bondarenko from Volgograd, Dr of Economic Sciences B. M. Grinchel from Leningrad, candidate of economic sciences M. V. Timashhevskaya from Novosibirsk and S. V. Fedosov from Odessa.

"How long," asks the father of six children, V. V. Bondarenko, "can we put up with this absurdity--subsidies? They break down the entire economic mechanism, impede the productive force, and give rise to antistimuli, consumerism and so forth. Any student knows that subsidies are produced by the people themselves and the state only distributes them. But here is the injustice: for instance, those who have no housing pay subsidies for those who have it. Subsidies are an object of ridicule and clear injustice."

"Families with many children deserve special attention. People without children are protected by other people's children who serve in the army. A pension from other people's children is something like a subsidy. But if one were to consistently follow the idea of eliminating subsidies, one would come to the conclusion that there should be a significant redistribution of income in favor of people with many children and at the expense of those who have none."

"If science proceeds not from fact, but from a prejudiced opinion, it is a part of the falsehood. The fight against falsehood in any of its varieties should be conducted to the very end."

S. V. Fedosov supports the publication of the article by D. M. Kazakevich. "In our country," he writes, "commodity and monetary relations are maintained and one cannot foresee that they will die out in the near future. There is a law of value and there should be no branches that are planned to operate at a loss in material production. One should add to what has been said that low prices lead to irrational consumption of a number of high-calorie products, which is harmful to people's health."

"Is it possible to make prices stable and flexible at the same time? No, unless you want to play a word game. Therefore it is necessary to conduct a policy not of stabilization of low prices, but of increasing labor productivity and wages. Then the growth of wages will outstrip the insignificant adjustment of prices that takes place from time to time."

V. M. Belyakov totally and completely agrees with the article by D. M. Kazakevich. He writes: "Low retail prices that do not correspond to

production outlays for many food products give rise to a series of negative phenomena. One of the most widespread of them is for some reason not mentioned either in the article or in other materials devoted to this subject. I have in mind mass purchases in cities with more or less adequate supply of meat products and other food products of these commodities at retail prices by the population of places where the trade in them is inadequate or does not exist. Thus it is not difficult to establish that a significant proportion, if not the majority of the population of cities and, which is especially paradoxical, the villages of Vladimir, Yaroslav, Kalinin, Tula, Smolensk, Kaluga, Ryazan and other oblasts buy their meat products in Moscow. This forces the state to make immense expenditures on delivering foodstuffs to Moscow, Leningrad and several other centers so that within a couple of days it will be shipped back, frequently to the place where it was produced.

"This phenomenon has several negative consequences. The possibility of purchasing meat and dairy products at an inexpensive price does not stimulate their production by rural population for their own consumption. Labor resources are diverted for trips for foodstuffs, time is spent waiting in line, and so forth. Transportation is overloaded with extra shipments of products and passengers. Some of the state funds are redistributed in favor of population who have the opportunity to purchase products that are in short supply at retail prices. All this artificially raises the standard of living of a considerable number of residents of the European part of the country and reduces it in certain other areas, particularly Siberia, where none of the population purchases meat products at cooperative trade prices.

"The question raised in the article by D. M. Kazakevich is not an easy one, but it must be solved while extensively explaining its essence to the workers."

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## PRICES AND SUBSIDIES DISCUSSED FURTHER

Novosibirsk EKONOMIKA I ORGANIZATSIIA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 143-146

[Article by B. M. Grinchel, Dr of Economic Sciences, Institute of Socioeconomic Problems of the USSR Academy of Sciences (Leningrad): "Prices and Compensations"]

[Text] The article by D. M. Kazakevich will undoubtedly elicit responses. Possibly certain of them will be negative since we do not always public interest in first place and sometimes we prefer immediate advantages to greater results in the future. I personally think the article is timely and interesting and the author's suggestions are scientifically substantiated. I fully share the author's opinion concerning the expediency of bringing prices for food products and payment for housing in line with socially necessary expenditures.

Indeed, prices of food products have long failed to reimburse social expenditures on their production, storage, transportation and sales. The more products that are produced, the more housing that is constructed, the greater the load on the state budget in terms of the volume of subsidies for these purposes. According to our calculations, up to 15 percent of the increase in the national income goes for subsidies for food and housing. These funds could be used for increasing wages in connection with the increase in labor productivity or increasing public consumption funds. A paradox appears: when offering, for example, a trade union pass with a rebate, many factors are taken into account: the quality of the labor of the worker, his material situation, health, family composition and so forth. Here it is also necessary to take into account that the passes are not given to every worker and not every year, and a subsidy amounts to from 30 to 100 rubles. At the same time every member of the society, regardless of his contribution to the development of public production and other factors, is granted a subsidy for food products by the state in an amount of 145 rubles per year or 310 rubles per one worker. These are the average figures, but in fact these subsidies are considerably higher for those people who have access to freer acquisition of high-quality food products that are in short supply and consume more than the average per resident in the country. These are not only honored people whom the society grants special privileges. Under the cover of order tables and other forms of trade in products that are in short supply, many people who do not have the

moral right to special supply and are not among the people with low income and given priority in the acquisition of the highest-quality products.

For about 20 years now the show windows of our stores have not reflected the essence of the country's food problem. The level of nutrition for the population is not as low as one might think from the availability of goods in the stores. There are a multitude of channels for satisfying the needs of people for food products—we have no hungry or starving people, and for many people the fight against overweight and the custom of overeating at the table has become crucial. This pertains to all regions of the country, including those where there is norming of meat and animal fat. It turns out that the availability of products in stores is not equal to the actual level of nutrition of the population, although foreign guests judge the well-being of the Soviet people from the abundance of goods in the food stores. The poor selection on the counters of our stores is used by hostile propaganda for its own political ends.

Prices of food products that are reduced by half and more lead to inefficient consumption, and frequently also to losses of many products. We do not store them carefully, either in the bases and warehouses or at home. Do we always take good care and fully use the potatoes, vegetables and bread that we buy? We are to blame for the fact that many products go to waste. Many families, especially young ones, have gone over to "delicatessen nutrition"—based on sandwiches, eggs, coffee and so forth. Indeed, time is more costly than these products, and one can do without soup, cereal and vegetables! But what does our public catering offer? In spite of the shortage of meat products in the country, dining rooms, cafes and restaurants try from early morning to feed us meat in various variants—this gives them good sales indicators with low labor-intensiveness for processing the products. Inexpensive and tasty dishes, even in the summer and autumn when there are many fruits and vegetables, are difficult to find in public catering, which does not bother us very much since the level of well-being of the population is rising. State subsidies go for beefsteaks, which are sold in restaurants and cafes. Families with low income levels do not go to them preferring to eat in workers' dining rooms and at home.

The problem of improving retail prices is important for the entire mechanism for managing the national economy. By bringing these prices closer to the socially necessary level of expenditures for the production of food products, one can essentially raise the level of balance and proportionality of the economy, improve the utilization of products, introduce a regimen of economy into each family, and teach everyone methods of efficient home management and balanced nutrition.

The question of compensating the population when conducting measures for improving resale prices for food products, apartment rates and so forth requires a profoundly differentiated approach. Families with low incomes, families with many children, students and pensioners with low pensions need full compensation based on the scientifically substantiated minimum norms for the consumption of food products for which the prices will be increased. With respect to compensation for increasing the payment for housing, I fully agree with D. M. Kazakovich's suggestion: to give compensation to specific families

for a particular period of time out of the special funds of the rayon soviets, depending on the increase in actual expenses for housing, but within the limits of the norms established for housing. Compensation for highly paid workers and pensioners with a high level of their pension can be either in the form of monetary increments or can be provided through reducing wholesale prices for industrial goods that are in daily demand (by reducing the turnover tax) for those groups of items which are produced in a sufficient quantity. In this case, in addition to compensation, one will achieve the effect of stimulating the demand for goods for which industry can expand the volume of production (clothing, footwear, watches, refrigerators, television sets, radios and so forth).

There are many variants of solutions here and they must be developed on the basis of public interests and the observance of the principle of social justice toward all segments of the population who are working honorably and have incomes proportional to their labor contribution. The preparation and implementation of the proposed reform of retail prices is an important socioeconomic and political measure.

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## DIFFERENTIATION OF APARTMENT RENT SUGGESTED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 146-148

[Article by M. V. Timyashevskaya, candidate of economic sciences, Siberian Zonal Scientific Research Institute of Standard and Experimental Planning of Residential and Public Buildings (Novosibirsk): "On Differentiated Apartment Rent"]

[Text] The political report of the CPSU Central Committee to the 27th Party Congress discusses the need for strict and unwavering implementation of the principle of social justice, including in the area of wages: "When a good worker and an indifferent worker are paid the same, this is a gross violation of our principles." By analogy with these words one can say that when a well-arranged full-scale spacious apartment located in a central part of the city costs the same as a crowded apartment with a low ceiling, with a combined bath and toilet, which is located in a remote region with difficult transportation access--this is also a violation of the principle of social justice. Just as wages should depend on the quantity and quality of labor, so apartment rent should correspond to the size and quality of the apartment.

The progressively growing deviation of the level of apartment rent from the level of socially necessary expenditures for the construction and operation of apartments must not continue for decades, for it does not correspond to the principles of maximum effectiveness of socialist management. Apartment rent amounts to an average of 2-3 percent of the earnings, while in developed foreign countries it is a minimum of 25 percent. Under these conditions is it realistically possible to improve the quality of our apartments to the level of world standards? After all, with such a low level of apartment rent there is no regular income of funds even for repair or reconstruction of housing or the maintenance of the existing housing fund at the proper level of repair.

It would be more advantageous to turn over the surplus dwelling space that appears when the family changes to private individuals rather than the state. Members of the cooperative pay completely for the construction and operation of their own apartments and they pay only partially for state apartments. Because of the lack of differentiation in apartment rent depending on the quality of apartments, the state subsidies are considerably greater for those who have large apartments with a higher level of conveniences. The result of

this is the increase in differentiation and the provision of housing.

In our opinion, the payment for the apartment should be made not only for the living space, but for the general area of the apartment. The residents themselves do not take into account the area of subsidiary premises that are not vitally important to them. The rate for 1 square meter of general dwelling space in an apartment is to be differentiated depending on the amount of wages of the responsible apartment holder. The restoration of a differentiated apartment rent per 1 square meter of general space in the apartment best provides for the socially just ratio between incomes and apartment rent in various groups of the population (see table).

Table—Proposed Change in Payment for 1 Square Meter of General Space in Apartment, Depending on Income of the Responsible Apartment Holder

<u>Amounts of Income, Rubles</u>	<u>Payment for 1 Square Meter of Apartment, Kopecks</u>
Up to 100	16.5
101-200	18.0
201-300	20.0
301-500	22.5
501 and more	25.0

The apartment rent should be differentiated depending on the quality of the apartment. It is suggested that the basis of calculation be 15 specific parameters that characterize the quality of an apartment. The standard for a modern city apartment is determined by central heating, hot and cold running water, the availability of a bath and toilet in the apartment, and in multistory residential buildings—garbage chutes, telephones, summer premises, the arrangement of the apartments toward the north, south, east, and so forth. Deviations from this standard evaluated by the unit and failure to reach the standard quality and, conversely, exceeding the standard (for example, the existence of two bathrooms in an apartment) determines an increase or a reduction in the coefficient of quality.

An especially complicated indicator of the quality of the apartment is its location in the city. We prefer those regions of the city which are filled to the greatest degree with facilities for cultural and domestic service (KBO). Therefore it is suggested that one use as a standard a peripheral region of the city with 35-40-minute transportation access, which is comprehensively built up, that is, provided with a sufficiently complete set of KBO institutions. It is suggested that the rest of the territory of the city (or any other urban population area) be differentiated again into five zones (a total of six) that differ in terms of the degree of provision of KBO institutions, taking into account the transportation access to the center of the city. It is obvious that the existing administrative division of the city into rayons is unacceptable in this case since it does not coincide with the quality of living.

One more indicator is suggested to be introduced into the system for evaluating the quality of the apartment: the density of the population of the apartment. In order to evaluate the apartment from these positions, the corresponding raising and lowering coefficients are introduced, and as a standard one uses the conditions in which the number of rooms in the apartment is equal to the number of people living in it. A differentiated evaluation of the indicator of density of dwelling can be the economic lever that regulates the distribution of apartments. Dense dwelling turns out to be disadvantageous, since it leads to a considerable reduction of the apartment rent. The fact that it is socially disadvantageous has long been recognized, but it is practiced for there is no effective evaluation for it.

More detailed evaluations of the quality of apartments and the corresponding methods have been developed in the SibZNIEP Institute (Novosibirsk).

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## SPECIALIZATION INVOLVES UPDATING CAPITAL

Novosibirsk EKONOMIKA I ORGANIZATSIIA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 149-151

[Article by V. A. Kalmykov, chief of the technical department of the oblast Stroybank office (Kurgan): "Updating Capital—The Path to Specialization"]

[Text] The branches must inform the enterprises of the control figures for technical reequipment for the five-year plan with a breakdown for the various years. But today, as a rule, the control figures are not stable, they change in the annual assignments, and frequently in the direction of reducing capacities or replacing the renewal of certain capacities with others. The Katayskiy Pumps Plant of the USSR Ministry of Chemical Machine Building in our oblast had no breakdown at all of the control figures for the years of the 11th Five-Year Plan. The Kurgansintez Combine of the USSR Ministry of the Medical Industry received control figures for the 11th Five-Year Plan which in terms of the increase in capacities never once coincided with the annual assignments. Molmashstroy of the USSR Ministry of Light and the Food Industry annually assigns to the Dolmatov Plant from 50 to 70 percent of the volume of the capital investments that are determined by the control figures. The Kurgan Plant for Wheeled Tow Vehicles of the USSR Ministry of the Automotive Industry, according to the control figures for the 5-year period and the plan for technical reequipment for 1985 developed for the enterprise, was to have increased capacities for producing spare parts. But the ministry set for the plant an increase in the capacities for producing sheet steel through technical reequipment, without backing up the assignment with funds for smelting equipment, and thus it predetermined the failure to fulfill the assignment ahead of time.

The examples that have been given confirm the difficulties with purposive and comprehensive updating of the enterprises' fixed capital. As a rule, new technological equipment and complicated automated lines, which can significantly exceed the level of production, must be ordered 2-3 years before the established delivery times. Additionally, the instability of the control figures for the 5-year period leads to a formulaic approach when drawing up the plans for technical reequipment since the enterprises have no confidence that their orders for material-technical and financial resources will be satisfied and that the ministries will give them precisely those tasks that were earmarked by the 5-year assignments.

It also sometimes happens that technical reequipment is used as a means of reaching the projected level by those enterprises which for a number of reasons were accepted for operation before they were completely ready.

Historically it has turned out that concentration at industrial enterprises of our country has been carried out on the basis of universal production. The enterprises have been overgrown with casting, forge-stamping, galvanizing, metallurgical and auxiliary productions. These productions, as a rule, are not fully loaded. Let us take, for example, the casting production. At two of the three plants of the USSR Ministry of the Automotive Industry that are located on the territory of Kurgan Oblast there are casting shops, one of which is being reconstructed at the present time and the expansion of the other was completed in 1982. At the Kurganarmkhimmash Association and the Katayskiy Pump Plant of the USSR Ministry of Chemical Machine Building, there are also casting shops. Industrial enterprises of other ministries located on the territory of the oblast also have their own casting productions.

The picture is the same for forged productions: practically all machine building enterprises of the oblasts have either forge shops or forge sections, and so forth. Highly productive equipment is utilized here with the coefficient of shift work of less than 1. Thus the forge shop at the Kurgan Plant for Wheeled Tow Vehicles uses only 24 percent of its planned capacity. At the Shuchanskiy Plant for Firefighting Machine Building of the USSR Ministry of Construction, Road and Municipal Machine Building the level of cooperation of production (the proportion of the value of blank pieces and semimanufactured products obtained from outside in the production cost of the product) is 8 percent, that is, they manufacture practically all of their own parts.

This kind of concentration of production, as a rule, does not lead to utilizing the advantages of socialist enterprises and does not provide for the corresponding savings on labor and production, and even conversely, it retards the possibilities of applying effective technical equipment and progressive technological processes. Yet the conditions of socialist management make it possible to carry out concentration of production on the basis of elimination of small universal productions and concentration of the output of the same kinds of products at specialized enterprises that are equipped with highly effective modern technical equipment.

It would be expedient to solve this problem on the basis of reconstruction and technical reequipment which, under the 12th Five-Year Plan, according to the decision of the 27th CPSU Congress, comprise the basic direction for the utilization of capital investments.

But one must keep in mind that in each oblast or kray there are two or three and frequently at least one enterprise of one branch or another. Therefore, it seems to us that it is necessary to consider questions of concentration and specialization of production within the boundaries of economic regions. Thus the Ural economic region, in addition to Kurgan Oblast, includes Orenburg, Perm, Sverdlovsk and Chelyabinsk oblasts, and also the Bashkir and Udmurt autonomous republics.

Transforming small-series and individual production into mass, large-series production through consolidating batches of items and concentrating their output in specialized enterprises will make it possible to apply highly productive technical equipment, to increase the return from the utilization of costly technological equipment, to obtain not a conventional reduction of the number of industrial production personnel, but a reduction of real work positions, and to send the released workers to other sections of production.

To do this it is necessary to revise the list of products that are produced by the existing productions and reorient them toward the output of narrowly specialized products. The existing production facilities, when they are reequipped should "be started" with highly productive automated lines, robotized complexes and other effective equipment intended for producing products that are all the same.

As a result of comprehensive technical reequipment of enterprises, the elimination of small productions and the deepening of specialization, considerable capital investments will be released and then they will be applied more effectively.

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## PETROLEUM, GAS INDUSTRY ORGANIZATION CHANGES

Novosibirsk EKONOMIKA I ORGANIZATSIIA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 152-154

[Article by A. A. Kozorezov, candidate of economic sciences, sector chief of the All-Union Scientific Research Institute of Organization, Management and Economics of the Petroleum and Gas Industry (Moscow) and S. P. Volyar, sector chief of the branch of the All-Union Scientific Research Institute of Organization, Management and Economics of the Petroleum and Gas Industry (Ivano-Frankovsk): "The Petroleum and Gas Industry: Both Unifying and Breaking Up"]

[Text] The question raised in the article by L. N. Shadrin [Footnote 1] seems extremely timely, but the suggestion concerning combining the petroleum and gas industry does not look perfect. Combining two fuel and energy branches into one will not make it possible to solve all problems completely, particularly to eliminate the negative influence of "giantism" on the effectiveness of management. What should be done?

Let us take a look at how the structure of production is taking shape under the influence of collectivization of labor.

Historically, three kinds of production have taken form in petroleum and gas industry activity: the construction of wells, the working of petroleum and gas deposits, and the building up of the latter. Each of these three productions is based on different technologies, more specifically drilling, extracting petroleum and gas, and civil construction, which are carried out by various means of labor (drilling installations, petroleum and gas wells, and construction and installation equipment) and qualifications of the workers (drillers, extraction workers, builders). Each of these productions also has its own economic basis of individual functioning, and its own balance for economic activity. As concerns the forms of organization of petroleum and gas activity, its development should not stand in contradiction to the production structure. If further division of public production requires a high level of its concentration, it should be accompanied by a deepening of specialization.

At one time, following these principles, the ministry of construction of petroleum and gas industry enterprises was formed, which made it possible to significantly facilitate the management of petroleum and gas industry

productions, for the activity of construction contracting organizations of petroleum and gas extraction associations was reduced to volumes that were appropriate for the cost accounting method.

Separating the gas industry from the petroleum extraction industry, although it did provide for gaining a perspective on management, also lowered the level of specialization of petroleum and gas industry productions, for all three of the productions were divided into two parts: drilling, extraction and building up of the deposits. Moreover, while in drilling the level of collectivization of productions dropped "simply" for organizationally it was under the jurisdiction of two ministries, the division of extraction of petroleum and gas had an effect also on the results of the working of petroleum and gas deposits since only in rare cases does gas appear separately from petroleum. In many cases these hydrocarbons are extracted not only from the same deposit, but also from the same well. And if such a well is on the books of the petroleum workers, the "gas elements" are burned, and if they are on the books of the gas workers the "petroleum elements" are burned. This, of course, is an intolerable and absurd situation.

The root of the problem, in our opinion, lies in the fact that the interpretation of the nature of the petroleum and gas industry activity that is current today has long been based on artificial notions. As soon as field workers are given the goal of developing petroleum and gas deposits and extracting petroleum and gas with deep wells, the petroleum and gas industry activity should include the construction of these wells. For the working of deposits is preceded by the construction of the wells and the building up these deposits.

The force of the traditional thinking of certain economists of the petroleum industry is such that they try to include the construction of wells in auxiliary productions. Yet no one would dream of considering tractor construction to be an auxiliary production of agriculture or housing construction an auxiliary production of municipal services....

It is only under the influence of traditional thinking that the general schema for the management of the petrol industry has established the existing state of affairs.

Repeating the words of Arnie Fayol, one can say that combining three independently functioning phase productions under the aegis of a unified specialized management apparatus of the petroleum and gas extraction enterprise is tantamount to biological absurdity--"one head with three torsos."

It was precisely the traditional approaches more than 10 years ago, when the question of further structurization of the petroleum extraction branch and its division into the petroleum and gas branches, that produced this "triune organizational formation." All three productions were not divided at the junctures, but were cut, as it were, by "vivisection."

One can draw the conclusion that the natural course of the development of the national economy along the path of deepening of the specialization of public

production and strengthening of the unity and integrity of productions leads to a situation where the drilling workers, like the construction workers in their day, are separated into the branch of construction of deep wells for any special purpose, for any client, whether they be extraction workers, geologists and so forth. But let us not rush ahead because it is still necessary to correctly solve the problem of the day--combining the developers of petroleum and gas deposits into one branch, and the builders of deep wells (drillers) into another. Thus we shall reorient the activity of the higher echelons of management and the reduction of the purview of productions will make it possible to significantly strengthen the unity and integrity of the production associations.

The lack of production and economic unity of drilling and extraction productions makes it possible to withdraw from the old petroleum and gas industry regions of the country a whole number of drilling enterprises for drilling wells in petroleum and gas deposits in new regions. In 1985 forces withdrawn from other regions were used to do the following drilling in associations: Surgutneftegaz--1,003,300 meters or 34.0 percent, Nizhnevartovskneftegaz--227,700 meters or 7.0 percent, Yuganskneftegaz--337,800 meters or 10.0 percent, and Noyabrskneftegaz--1,505,900 meters or 64.0 percent of the overall volume of drilling done in the associations.

This form of organization of drilling continues to develop in the Ministry of the Gas Industry as well. All drilling organizations engaged in the construction of wells not "for themselves" are included in their organizations formally, and their activity is economically based on production relations with the client associations.

#### FOOTNOTE

1. EKO, No 1, 1983.

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## PRODUCT UPDATES REQUIRE COMPREHENSIVE APPROACH

Novosibirsk EKONOMIKA I ORGANIZATSIIA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 155-157

[Article by V. I. Kolida, production chief of Synthetic Rubber Plant (Omsk): "Coordination Without Updating or Updating Without Coordination?"]

[Text] The work for reorganizing production and introducing new technologies and equipment that has been developed in recent years is impeded by the fact that so far the interests of outside organizations (mainly the head planning and scientific research institutes) prevail over the interests of the enterprise. What do we have in mind?

As a rule, the plan determines the final amount of capacity of the reorganized facility. But the enterprise, because of a number of reasons, carries out the reorganization in stages, which is not taken into account by the head planning institutes. In order to protect its interests from the planning agencies, the enterprise is forced to enlist associates from scientific research institutes and planning organizations in order to determine the actual balance of capabilities of the reorganized facility in one stage or another and, of course, it must pay for this work. Frequently the objectiveness of the new evaluations of the capabilities of the reorganized capacities by planning agencies and the ministry can also fail to be taken into account because of previous decisions. Thus there begins another round of defending the interests of the enterprise. The enterprise is the active initiator of this cycle of enlisting specialists, generating documents and recordings of investigations, technical conferences and waste of financial funds. But is this kind of activity rational? Would it not be simpler to include in the plan itself the step-by-step nature of its implementation with a determination of the amounts of output of products, provision of equipment, financial means and so forth?

The next important aspect is the quality of planning of the reorganized facility. A miscalculation of the capabilities of technology or equipment ends up in an infringement on the interests of the enterprise and failure to carry out planning assignments. It would seem that the planning institutes should be materially responsible for such indicators as failure to fulfill the plan for products sales. Unfortunately, the planning organizations have their

own criteria for the plan and this means that they have their own system of material incentives for workers who draw up the plans.

Under the conditions of scientific and technical progress and rapidly changing ideas, the existing system of introducing innovations into production suffers from great inertia because of the excessive protection on the part of scientific research institutes, the head planning institute and the ministry. For example, at one enterprise that is under our ministry but a part of another all-union production association, they used a principally new economic system for obtaining products. In order to adopt and introduce it, it is necessary:

to obtain complete information from the enterprise where the system is being carried out;

to give this information to the head scientific research institute and obtain a positive decision;

having the decision from the scientific research institute, it should be sent to the head planning institute and the decision should be obtained;

having a decision from the scientific research institute and the head planning institute, they should be sent to the all-union production association and a positive decision should also be obtained from it.

On the basis of all of the aforementioned documents the design division of the enterprise prepares a plan and the enterprise submits orders for equipment which will be filled within 2-3 years. The plan as a whole is introduced, as a rule, 3-5 years after the information is obtained.

The situation is even more difficult with technical documentation and introduction of theoretical developments both of VUZ science and of the branch institute. The endless correspondence concerning the introduction of the development and all kinds of coordination and overlapping of the interests of the enterprise, the design institute, the scientific research institute and the ministry hold things up. Frequently the enterprise, while confident of the effectiveness of the technical documentation of a theoretical development, makes everything ride on the ultimate fact in the form of an invention that has been documented and introduced generally in some illicit way, that is, without coordination through the system presented above. Of course, there is a good deal of risk here. But what else can they do?

In our opinion, in both planning and technological documentation of theoretical developments, the enterprise should be given independence and the functions and rights of the technical council, the design division and plant science should be expanded. In the final analysis these subdivisions are guided by the same standards as the scientific research institute and planning organizations, and they are responsible to the all-union production association.

Independence in the planning and evaluation of scientific research work would make it possible for the enterprise's technical council to resolve the problem

of accelerating its development more efficiently and rapidly. Managers of the enterprise would have greater activity, interest and responsibility for the introduction of innovations and they would also be relieved of the considerable, frequently unnecessary work from branch planning and research institutes. Now, when gathering and sending information to institutes and the all-union production association concerning the work of the enterprise, the technologists and the technical division fill the role of statisticians. The institutes and the corresponding divisions of the all-union production association play the role of informers. If someone does not like something in the information that has been sent, new requests are sent out.

When it comes to transferring advanced experience within the framework of the branch, only a system of information and research has been arranged. But so far there are no systems for transferring technical documentation and plans in order to avoid repeated coordinations at the various levels. I think that in these issues it is necessary to increase both the independence and the responsibility of branch scientific research institutes.

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## READERS RESPOND TO MAGAZINE ARTICLES

Novosibirsk EKONOMIKA I ORGANIZATSIIA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 158-164

[Selection from letters and questionnaires of readers prepared by T. R. Boldyрева: "A Selection of Readers' Letters"]

[Text] There Are Already Plenty of Rhetoricians

In my understanding, all the negative phenomena we see in economic and social life are manifestations of existing contradictions. They are aggravated if the objective laws of the development of the economy of socialism are ignored.

Economic science is called upon to figure out these contradictions and recommend ways of surmounting them. In the agrarian sector one can already see how the reorganization can be done, but the situation is more complicated in many branches of industry. One gets the impression that there are no economic developments which would make it possible to predict precisely the paths of intensification for the workers in practice.

Stagnation in economic and social sciences has largely contributed to the appearance of the custom of waiting for instructions and decisions from higher organizations. Dogmatism in concepts and convictions and fear of punishment for innovation have transformed the majority of workers in industry into mindless performers, the more so since many are not in possession of much of the baggage of economic knowledge.

The magazine EKO is popular among "technical types," but the range of its readers is limited. Practical workers need concrete knowledge, and not only in the form of instructions and methods. We need a well-constructed economic theory of the development of socialism. And serious, well-founded training. Only then will it be possible to awaken and develop economic self-awareness, without which it will be difficult to implement organizational, technical and economic decisions.

It seems to me that attempts to interpret the problem of state property and the attitude toward it on the part of each worker and collective is of special interest. There can be no revolutionary changes in the economy without changes in this attitude. I think this applies to social life as well. And

here I consider the primary factor to be complete cost-accounting and self-financing. The introduction of the achievements of the scientific and technical revolution, new forms of labor organization and improvement of planning, price-setting and other things are all secondary.

I believe that if the restructuring takes place simultaneously at the state, scientific and production levels, the country will be able to solve many of its problems before the year 2000.

A. G. Sorokin,  
CPSU member since 1945,  
Heavy Machine-Building Plant  
imeni Kuybyshev, Irkutsk

#### Retraining--A Necessity or a Random Occurrence?...

Any diversity is good when the essence of the matter does not suffer. Almost everyone is engaged in personnel training: the Ministry of Education, the Ministry of Higher Education, and the State Committee for Vocational and Technical Education. Every department has its own teknikums and institutes, and almost every large plant has its own GPTU. And they all have different requirements, rules and regulations. Does this help to solve the single problem of preparing skilled personnel for the national economy? I doubt it.

But what happens with the increase in qualifications: there are branch and interbranch institutes for increasing qualifications, courses, and faculties for increasing qualifications. Branch centers for scientific organization of labor, which have proliferated greatly, also have their own courses. But the majority of institutions for retraining specialists lead a pathetic existence in unsuitable premises and are experiencing a need for instructors with high qualifications. Is this really the state approach? We hear everywhere that we should undergo retraining once every 5 years. If this is serious retraining, then probably it is not necessary to do it more frequently. But now this situation is unjustified, the more so since there are many cases in which increasing qualifications amounts to only talk. For example, 18 years ago I completed the institute and waited until my turn came for retraining. But before my turn came I completed a second institute in 1982. I can make a living for the time being!...

Yu. I. Ayrapotov,  
Chief of the Division for  
Organization of Labor and Wages  
of the Radiotechnological Supply  
Plant, Votkinsk, Udmurt ASSR

#### Attention: Agroaquanomia!

We in the central belt of Russia have in small lakes and ponds floats on which fishing equipment has been installed: a 1.5 x 1.5-meter tank within which a garden bed is hanging or floating in the water. One can obtain 12-14 kilograms of cucumbers and 30-40 fish per square meter. We raise cucumbers, tomatoes, dill, lettuce, strawberries and other garden crops. These are

raised along with the fish and without reducing the productivity of the fish. The fish include carp, sturgeon and eel. Calculations show that this way one can increase food production by a factor of 2-3 as compared to unarable land. At the same time it is possible to raise forage plants on the surface of the water, obtaining up to 30 tons of green mass per hectare. Perennial garden crops grow well under these same conditions: raspberries, currants, and cherries. Thus at the juncture of agronomy and hydrobiology, hydroponics and fishing we have obtained extremely promising results. The new scientific direction is called agroaquaculture (agro—land, aqua—water) and the technique of raising the crops is called agroaquatics. This way the plants do not need fertilizers (they obtain them from the water), toxic chemicals (the weeds do not grow) or, naturally, irrigation. Vegetables, fruits and fish have good taste. Not only experimental, but also production installations of this type are possible. The work is being done on a public basis, through the efforts of enthusiasts.

N. I. Samarin,  
Laboratory Chief of the All-Union  
Scientific Research Institute of  
Pond Fisheries, Elektrogorsk,  
Moscow Oblast

#### Fulfillment or Deception?

It is a common occurrence: the shift does not fulfill the plan for producing products because of idle time at the beginning of the month. But at the end of the month there is no idle time and the plan is fulfilled "successfully." The shop has not kept up with the assignment for commodity output, but then the assignment can be reduced at the expense of the other shops. The association fails to fulfill the plan by "only" 200,000 rubles. The managers sit at their telephones and promise "next time".... And here appears the desired 0.1 percent "overfulfillment" of the plan--Moscow has not let them down: they have added to some and taken away from others. But the collectives of the best brigades, shifts, shops and associations always end up at a disadvantage.

There is another kind of adjustment that is not so obvious. "In order to improve the plan"--that is what they call it. The assignment has been changed with respect to one item, but the overall picture does not change. The monetary expression of the plan has changed, but in physical terms it is the same. A simple manipulation with the planned production cost and bringing the output of products up to the actual fulfillment--and the unfulfilled production cost becomes lower than the planned production cost. These kinds of adjustments create the impression that planning figures are insignificant and unimportant. But this is after all a trap, a circumvention of the plan which is the law.

If one were to calculate in rubles the bonuses paid for "fulfillment" with the help of adjustments of the assignment, the sum would end up in a figure with many digits. The moral damage is obvious. The justifications are stereotypical: "One must not fail to pay bonuses to the workers," "One must not let a good collective down," "We can still catch up," "Next time!" and in

these cases everyone starts talking about the love for their home enterprise, for the benefit to the common cause, for increased motivation. But actually this amounts to deception of themselves and of the society as a whole. Or poor development of monthly, quarterly and annual plans. Yet there are computers everywhere on which it is possible to calculate various variants of the future plan; "A stitch in time saves nine." But we are all lame and we are deceiving of ourselves....

V. A. Yurkov,  
Senior Economist of the Khimprom PO,  
Pervomaysk, Kharkov Oblast

#### How Much Does a Ton of Scrap Metal Cost?

People traveling along rural roads find much occasion for agitation and the desire to scold somebody for inefficiency. Thus along the road is a graveyard of technical equipment that clogs up the pastures and the approaches to the towns and villages. And so much of it is rusting in the fields! One thinks: Somewhere they are extracting ore from great depths, shipping it to metallurgical plants, and then the metal is turned into rust.

With thoughts like these I went to the chairman of the kolkhoz, disturbed by all I had seen over a distance of only 3 kilometers. I heard a truth that has long been known to many people: collection, sorting and transportation of scrap metal from the fields to the rayon center to the Vtorchermet point costs several times more than the value of the scrap metal that is turned in. Naturally, a vehicle is abandoned in the place that it breaks down. For there are more motor vehicles in rural areas than there are drivers. If one is broken down, they acquire another one.

I was even more surprised when I found out that a ton of steel from scrap metal costs one-20th of what it costs when it comes from ore. But having recalled the chairman who proved to me in 5 minutes that he was able to count money, I ended up in a blind alley with the question: Why do the corresponding management agencies not increase the price of a ton of scrap metal? After all, that would cause the most inefficient businessman to sell his supplies of scrap metal and the state would be able to extract much less ore.

S. V. Lomov, Engineer,  
Balashikha, Moscow Oblast

#### Where Can a Pensioner Work?

There are now tens of millions of pensioners in the country. Soon I too will join this army. I expect a maximum of 120-132 rubles instead of my 218 rubles plus the 13th wage. Now I can slip into a cooperative store once in a while, while tomorrow that will be more difficult. And the children and grandchildren will cost money too.

I can work, of course. Where? It seems to me that there should be a system of vocational reorientation for potential pensioners. It would be possible to

organize evening GPIU's and in the evening, when the classrooms and shops are empty we could, taking into account the shortage of labor resources, without leave from production, acquire a new occupation that is appropriate in terms of health and age, possibly with an incomplete working day. Unfortunately, I have never read about this in the articles in your magazine, or anywhere else either. I have not found an answer to where any of the many pensioners can go? I would like not to sit in a kiosk, but to find more interesting, manly work.

E. P. Penner,  
Barnaul

#### We Plan the Cities and Villages of the Kray

The time periods are usually limited. It is quite understandable that a good deal depends on the cost of the planning work, on the coefficient of "output divided by wages" which can sometimes reach 4 and more. This means that the planner must do enough work for four salaries and more each month because there are too many parasites who do not even know what a plan is. A minimum amount of time is allotted for investigating the village or city, and this results in unfeasible plans. If the plan has been drawn up by a conscientious, capable author who is also capable of having it approved at many levels, the bonus is divided up as follows: 50 percent into the institute's fund and 50 percent for remuneration. Half of this second half goes for bonuses for managers of the institute and division and auxiliary services. And one-fourth of the entire bonus remains at the disposal of the author's collective, which includes no less than 10 people. The author of the plan himself receives a miserly sum. This is how incentives are provided for planning cities and villages....

I. V. Samoylova, former economist  
of the Krasnodar grazhdanproyekt  
Institute, Krasnodar

#### Not To Live by Another's Wit!

I have become convinced that in developing domestic computer equipment and software they do not adhere to the principle of "development according to analogues," but they simply copy. And they do not always do this well. What kind of a technical economic policy is directed toward economizing on funds for scientific research and experimental design work? This guarantees that we will lag behind. Or is this done out of a desire "not to reinvent the wheel," not to take a risk, but to travel along the trodden path? Then why do they carefully copy all the stages along this road which have already been traveled by the best firms of the world? Or is this ordinary mental laziness combined with excessive caution? After all, we have our own original developments (true, only on paper or in experimental models). I should like to know what the general designer of the YeS computer thinks about this. With what machines are we maintaining our policy of acceleration?

S. B. Zharkov,  
engineer-programmer, Kazan

## Starting Up an Object Is Difficult....

A large shop is under construction. It must be provided with planning estimates, equipment, material resources and so forth and so on. Thousands of problems! And in the end it is necessary to start up the production at planned capacity. The period for startup and assimilation of capacities is a "bloody" period for the client. One can see the mistakes of planners, construction workers, developers of technology, designers and manufacturers of equipment. Sometimes these mistakes are apparent in the stage of planning or construction. It would seem that the solution is simple: let us eliminate them. Impossible. Moreover, the client must close his eyes and deviate from the planning and design documentation. What is the matter?

Everything lies in the approach: the startup of the facility (shop, plant) should take place precisely on time, as a rule, at the expense of quality. And then people will be willing to give and spend generously on "bringing up" the new shop to the normal condition. I do not know, have not seen and have not heard of any place or any new shop which can be considered the standard for the startup.

They say there is a pattern: the chief of the facility under construction should not wait until the startup--for either it "departs" or he himself departs.... If they fail to meet the deadlines for the startup and assimilation of new capacities, if the purification of air or wastewaters works poorly, if they exceed the maximum permissible concentrations of harmful substances, if it suddenly turns out that the expenditure of materials is much greater than the planning indicators, if.... There are many, very many of these "ifs"! In any case, everything is put to the side and the client is guilty, the chief of the new shop is personally to blame.

But why do not all the participants in the creation of the new production give passport-guarantees for a certain period of operation of the shop! Any kind of breakdown or malfunction would be eliminated outside the plan and at their own expense (they were their mistakes)!

There are many documents that regulate relations among the client, contractor and planner. It has become normal to violate them. They say that otherwise nothing would be constructed at all. Of course, life is more diverse than instructions, but sooner or later order must be imposed. It is a pity that this range of problems is almost never examined on the pages of EKO.

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## LETTERS AND QUESTIONNAIRE ANSWERS SURVEYED

Novosibirsk EKONOMIKA I ORGANIZATSIIA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 165-168

[Survey of letters and questionnaires by V. Lavrov, N. Orlova and S. Dementyev: "Where Does the Compass Needle Point?"]

[Text] Readers' opinions about articles, their advice and desires as well as their suggestions can be called a "compass" for any editorial board. Here at ENO our weekly planning sessions frequently end with reading letters from readers and discussing them. We generally call the editorial worker who gives an analysis of the issue of the magazine that has just come out the "critic in charge." Our readers also handle these duties successfully, although by correspondence.

Certain "critics" think that EKO has not yet found its readership. This is possibly true, but after repeated questionnaires and attentive study of the mail the editorial staff knows for whom it is working.

Average age—38 years. The youngest readers, who look at the "pictures," according to our data, are first graders. The oldest have been alive for 79 years. The most interest in the magazine is manifested by people 30-40 years of age; the second "peak" of attention to EKO begins after the age of 50.

Place of work. The readers are employed in all branches of the national economy. The majority—and the editorial staff cannot but take this into account—work in the sphere of production—51 percent. Workers of independent scientific research institutes, design bureaus, laboratories and planning institutes, and also VUZes and other educational institutes comprise 34 percent. EKO has from 6,000 to 7,500 readers in central and republic management agencies.

Position. The range is wide. From workers (their number is not great—about 3,000 people). They, as a rule, have higher education or very high qualifications and have mastered many specialties) to ministers and deputy ministers of union branches. But the most widespread and attentive reader is the engineer who works in shops, technical divisions, and design bureaus. There are many chiefs of technical services. Approximately equal (about 9 percent) are groups of teachers and top managers.

Among the latter, the largest group are directors of industrial enterprises. There are approximately 10,000 of them. The issues of the magazine are regularly seen by 15,000 chiefs of economic divisions of plants and associations. Associates of these divisions, it seems to us, do not yet show special interest in EKO articles, there are half as many of them and, apparently, they receive their information from other sources, particularly EKONOMICHESKAYA GAZETA. Departmental publications occupy a large proportion of the reading of workers in economics divisions.

Among the scientific workers who have scholarly degrees, as compared to the preceding questionnaires, the group of doctors of technical sciences and other sciences and also candidates of sciences who are familiar with EKO, the group of doctors and candidates of economic sciences have the largest number. Every sixth reader of the magazine has a scholarly degree.

The ratio between men and women--82 and 18 percent--sometimes causes the editorial staff to think; after all, in the national economy this ratio is quite different, and in the editorial staff itself women predominate and keep up with the leading editors who are men in terms of the number of business trips to enterprises of the country.

Place of residence. About 68 percent of the subscribers and readers live in the European part, 23 percent in Siberia, 7 percent in Central Asia and Kazakhstan, and 2 percent abroad. They live in large and small cities and settlements of an urban type, and although the analysis reveals a slow growth of readers in rural areas (from 3 to 5 percent), there is the suspicion that some of them live there and work in cities. From the questionnaires we did not manage to discover regular readers in rural areas except for directors of sovkhozes and chairmen of kolkhozes.

EKO advisers among the mass media. The lists of newspapers and magazines regularly read by the authors of the questionnaires is fairly large. Among the newspapers PRAVDA stands out sharply. After that, in a descending order of readers' interests are: LITERATURNAYA GAZETA, KOMSOMOLSKAYA PRAVDA, IZVESTIYA, EKONOMICHESKAYA GAZETA, TRUD, SOTSIALISTICHESKAYA INDUSTRIYA, and SOVETSKAYA ROSSIYA. The leading journal is NAUKA I ZHIZN and after that came technical journals in their specialties, VOPROSY EKONOMIKI, IZOBRETATHL I RATSIONALIZATOR, KOMMUNIST, YUNOST and NOVYY MIR.

Profile of the magazine. Here opinions were split approximately in half. One-half of the readers think that the magazine should limit its subject matter to the existing headings. The other half thinks that the magazine's subject matter should be expanded. EKO sees its task in "popularizing the latest achievements in management and organization at various levels in order to introduce them into practice."

Special attention is given to materials of an applied nature, which contain advice and recommendations that can be used in a specific situation.

Workers of economics services are dissatisfied with the fact that we do not print enough articles directed toward them. Apparently special attention

should be given to the group of readers who are foremen and section and shop chiefs who "work with the working men only on the basis of personal experience, without science" and for whom the magazine could be of real assistance.

The editorial staff is being asked to increase the volume of factual material, calculations, commentaries and conclusions, and also from time to time to provide a comprehensive analysis of the economic activity of a specific enterprise. Very important here is a "comprehensive" view of one and the same problem: that of the scientist, the director, the shop chief, the foreman and the worker.

In addition to what was said above, our readers suggest:

Publishing more appendices to the magazine: to help the director, engineer and foreman, "advice to the businessperson," and a selection of the best articles of the year. Of course, it is not a simple matter to publish appendices, but it is worthwhile to try to do this.

If only from time to time we should publish issues on special subjects that are completely or almost completely devoted to a single problem. One is reminded of the issue; with extensive selections concerning the experience of the Volga Automotive Plant, female labor, the Food Program and so forth.

More frequently we should produce survey materials with statistical illustrations, diagrams and graphs which show the best oblasts, branches and enterprises, revealing concrete methods and forms of work.

The readers also set a more difficult task: "to become the center of interpretation of economic policy on the threshold of the 21st century, since in the magazine one can see less inclination toward dogma than in other similar magazines." It seemed to us that this was a task for more than just our magazine. We are well aware that at the same time many readers justly criticized the weakness of the heading "Crucial Problems of Economic Theory." Its subject matter and its future were specially analyzed and discussed at one of the meetings of the editorial board. Efforts are now being made to fill this heading with more profound content.

"We should like to read more about the most crucial problems in our national economy and ways of solving them"--many of the readers who were questioned and the authors of letters come close to this statement. This is especially important in our day--a time of change and decisive actions.

The materials under the heading "Systems and Methods of Management" have the greatest demand among the readers. In order to develop this it is suggested that we publish more frequently articles by practical workers from enterprises and from ministries regarding specific problems of improvement of planning and management, reviewing the methods for making effective management decisions.

Another section which always attracts attention is "Improvement of the Economic Mechanism." And it is not the "disclosure" of shortcomings that is important so much as the development of proposals for eliminating them. The

general desire of the readers is to actively use the discussion form here and enlist workers from competent management agencies. The main problem is cost accounting.

The "bank" of ideas and suggestions from our readers is very rich and it is impossible to convey its content in a brief report: from the specific nature of female labor in machine-building enterprises to the state financial policy and economic reforms in Hungary and China. Therefore we shall discuss only one group of readers which has one desire.

This is the prestige of engineering work. Now a good deal is being done in the country in order for the body of engineers to exert a decisive influence on the turn in the direction of intensive methods of management. At the end of 1985 the editorial staff introduced a new heading, "Engineering Labor--The Key to Effectiveness." What subjects are the readers suggesting? Mass departure of engineering and technical personnel to workers' positions, fair evaluation of engineering labor, teaching of the theory of resolving engineering problems (TRIZ) and the emergence of technical youth.

In the opinion of many readers, the magazine does not do a good job of discussing the positive experience of developed socialist and capitalist countries, especially in the area of management.

Some of the readers note that during the 1970's EKO was "somehow fresher, more interesting." "Certain readers know more about the problem than the authors do...." But on the whole the line of the editorial staff is supported by the readers. We intend to work in the future, taking into account as much as possible the readers' opinions, criticisms and suggestions. Economics is penetrating our entire life and today's circulation of EKO shows that the editors should forge more boldly and deeply into economic life and satisfy the readers' desires more fully.

The editorial board and the editorial staff thank everyone who is sincerely interested in the magazine's development, who responds to articles, and who has filled out and sent in our questionnaires year after year. The proposals mentioned in this survey and those that were not are being given careful consideration.

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## ROLE OF PERSONALITY TYPES IN BUSINESS DISCUSSED

Novosibirsk EKONOMIKA I ORGANIZATSIIA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 169-188

[Article by A. L. Galin, Novosibirsk State University: "What Kind of Character Do You Have?"]

[Text] Probably nobody needs to be convinced of how important it is to figure out the characters of the people one encounters every day--whether they be relatives or your co-workers. And yet our ideas about the types of characters are sometimes extremely abstract. We frequently make mistakes in evaluating the person who interests us. We sometimes have to pay dearly for these mistakes: for this can be a mistake in the selection of a friend, an assistant, a co-worker, a spouse and so forth. It is also a matter of the fact that, having a poor idea of characters, we sometimes do not notice the best features of people around us, we overlook what is valuable in a person, and we are not able to help them disclose it.

The individual--the personality--of course, cannot be reduced to character. The individual is defined primarily by the social activity he engages in. The individual has social orientations, ideals, an attitude toward those around him, an attitude toward various aspects of life, knowledge, abilities, skills, capabilities, the level of their development and temperament. Individuals inherently have harmonious development as a whole, the ability to learn, flexibility of behavior, the capability of adjusting, the ability to solve organizational problems, and so forth. But characterological features are also of essential significance for understanding the individual. The brighter the character, the more it leaves its stamp on the individual as a whole, and the more it influences behavior.

In recent years in practical psychology, mainly because of the efforts of K. Leonhard (GDR, Berlin Humboldt University) and A. Ye. Lichko (Leningrad Psychoneurological Institute im. i V. M. Bekhterev) we have formed ideas of the most outstanding (so-called accented) characters, which are extremely interesting and useful for practical workers, among other things because they can be taken into account in the organization of production activity. Certain stable combinations of characterological features were noted, and it turned out that these combinations are not an infinite quantity, but little more than a dozen. At the present time there is no unified classification of

characters. The state of affairs in this area of knowledge can be compared with the situation in describing chemical elements before D. I. Mendeleev created his periodic table. But it can be noted that many ideas have been fully established.

Each of the outstanding characters is encountered on an average of 5-6 percent of the cases with varying degrees of expression. Thus no less than half of all the workers have outstanding (accented) characters. In individual cases one encounters a combination of character types. The rest of them can conventionally be included in the "average" type.

Below we shall discuss the most outstanding characters. Take a look at the people around you. Possibly our recommendations will help you to figure them out and work out a good line of communication and interaction with them. However, one should not be drawn up in making psychological diagnoses. Each person in various situations can manifest features of almost all the characters. But the character is not determined by what happens "sometimes," but by the persistence of the manifestation of features in many situations, the degree of their expression, and this relationship.

And so:

#### The Hyperthymic or Hyperactive Character

Viktor Nikolayevich S. came to the shop when he was 23 years old. He immediately drew attention to himself with his "enraptured" attitude toward people and his high level of benevolence and sociability. He quickly became acquainted with everyone and was equally friendly to all those people who did not get along well with each other. People said about him: "A good old soul."

Soon, however, there were complaints about his work: much of what he took on he never completed. In particular he paid no attention to work documentation. Viktor Nikolayevich, who was constantly engaged in friendly communication and discussion of the news, simply did not have time for everything. But in order not to spoil his relations with the superiors, he quickly put the documentation in order, not taking this very seriously, incidentally.

His optimism sometimes leads him to a point where he begins to praise himself, expounding the "natural theory of the change of generations" and predicting high positions for himself. His good mood helps him to overcome difficulties, which he always regards lightly as something temporary and passing. He voluntarily engages in public work and strives in everything to confirm his high self-esteem.

Such is the hyperthymic type.

If in the collective of which you are in charge there is a person with a hyperthymic character, the worst thing you can do is entrust to him painstaking, monotonous work that requires acidity, limits contacts, or deprives him of the possibility of displaying initiative. With such a worker no good will come of this. He will object violently to the "boredom" of his

work and neglect his duties. But the dissatisfaction that appears in these cases is not of a malicious kind. Once having escaped the conditions he finds unacceptable, the hyperthymic, as a rule, holds no ill will against others. Create conditions for his manifesting initiative and you will see how brilliantly his personality unfolds and the work begins to go very well in his hands. It is best to assign hyperthymics to production sections where contacts with people are necessary; they are irreplaceable in the work of labor organizations or creating a friendly climate in the collective.

Disturbances of adaptation and health in hyperthymic people, as a rule, are related to the fact that they do not spare themselves. They take on a great deal, they try to do everything, they run, they hurry, they become upset, frequently they complain about the many demands placed on them, and so forth. It seems to them that all problems can be solved by increasing the rate of activity.

The basic recommendation for people with the hyperthymic type of character is not to hold them back, which might seem to be the correct thing at first, but to try to create conditions for their activity which will make it possible for them to express their abundant energy in work, sports and communication. Try to avoid disturbing situations, reduce agitation by playing calming music—or one can even go as far as using light sedatives and autogenic training.

#### The Autistic Character

The chief of the plant's technological bureau, Lidiya Ivanovna K. maintains an official demeanor in work and never reveals her personal experiences in front of others. She is alone. She is alienated even during gay celebrations, and she looks at the general cheerfulness as if from the outside.

Lidiya Ivanovna is not very communicative. If she has difficulties in work she tries to strengthen everything out herself. She spends much time at the plant and frequently stays late. Incidentally, even at home she frequently continues to do things related to work: she reads books on her specialty and figures out diagrams. It is no accident that she has authority among other technologists.

But while she is a good worker, as a person Lidiya Ivanovna is not well understood by those around her. For the majority of people express their emotional positions in their communication and they expect that of people with whom they are speaking.

But people like Lidiya Ivanovna are "tired up." They perceive the situation emotionally and have their attitude toward various aspects of life, but they are very sensitive and easily wounded and therefore they prefer not to reveal their internal world. This is why they are called autistic (Latin auto—turned toward oneself, closed). In communication with people of this type one can encounter both increased sensitivity and timidity and an absolute "stony" coldness and inaccessibility. Changes from the one to the other create the impression of inconsistency.

The autistic character has its own positive aspects. Among these are the stability of intellectual and aesthetic interests, tact, unobtrusiveness in communication, independent behavior (sometimes excessively marked and persistent), and observance of the rules of formal business relations. Here people of an autistic character, as a result of subordinating their feelings to reason, can provide models for emulation. The difficulties for this characterological type are associated with entering into a new collective and arranging informal ties. Friendly relations are established with difficulty and slowly, although if they are established they turn out to be stable, sometimes for life.

If someone with an autistic character has come to your collective, do not rush to establish informal relations with him. Persistent attempts to penetrate into the internal world of such a person, to "creep into their soul," can lead to a situation where they close up and go inside themselves even more.

The production activity of such a person can suffer from the fact that he wants to do everything himself. This path leads to high qualifications, but frequently the new knowledge and experience could be obtained considerably more simply by communicating with other people. Moreover, excessive independence makes it difficult to switch from one question to another and can impede cooperation. Without "creeping into the soul" of such a person, it is important to organize his activity in such a way that he can hear the opinions of people around him.

Sometimes people with an autistic character take the easier path--they communicate only with people like themselves. This is partly correct, but it can strengthen the existing peculiarities of character. And communication with an emotional, candid, benevolent friend can sometimes completely change a person's character.

If you have such a character yourself, this is our advice: try not to reinforce your isolation, aloofness and restraint of feelings in communication. Positive features of your personality when taken to the extreme become negative ones. Try to develop emotions and the ability to express your feelings. Emotional firmness, decisiveness and the ability to defend your position--these are just as necessary as the development of other qualities--intellectual, cultural, professional, business and so forth. A shortage of these things causes human communication to suffer--one of the most valuable aspects of life. And in the final analysis it also involves your professional activity.

#### Labile Character

The work situation is very important for the assembly worker Anna Fedorovna P. The slightest rudeness can put her in a depression while the simplest praise can make her ecstatic. Once Anna Fedorovna refused to go to another shop with a higher salary because the boss there was rude. Feeling her psychological vulnerability, she tries to protect herself from contacts with people who are sharp and categorical, and if they are unavoidable she tries not to get into conflicts with them.

Usually a person, when experiencing some emotion, for example, joy, cannot quickly "change" it. He experiences it for a certain amount of time even if the circumstances have changed. This is a manifestation of the usual inertia of the emotional experiences. This is not the case with the emotionally labile character: the mood changes quickly and easily according to the circumstances. Moreover, an insignificant event can completely change a person's emotional condition.

The rapid and strong change in the mood of such people makes it impossible for the average type of people (more inert) to keep track of their internal condition and sympathize with them impartially. We frequently evaluate people according to ourselves, and this frequently leads to a situation where the feelings of a person with an emotionally labile character are regarded as superficial, changing too rapidly, and therefore somehow unreal, the kind to which one should not attach significance. And this is wrong. The feelings of this type of person, of course, are the most "real" and one can become convinced of this in critical situations, and also from the stable attachments this person has, the sincerity of his beliefs and his ability to sympathize.

A mistake in relating to a person with a labile character can be, for example, the following situation. A boss who is not sufficiently acquainted with his subordinates can call them in his office, criticize them, "brute" them, being oriented (unaware) to his own emotional inertia. As a result the reaction to criticism can turn out to be unexpected: a woman might burst into tears, and a man might quit his job.... An ordinary "shoving out" can end up in a psychological trauma for life.

A person who has a labile character must learn to live in a world that is "harsh" and "crude" for his constitution and learn to protect his nervous system, which is weak in a certain sense, from negative influences. Living conditions and good psychological health are very important, since the same features of emotional lability can be manifested not as positive, but as negative factors: irritability, instability of mood, a pathetic tone, and so forth. A good psychological climate in the labor collective is very important for people with this character. If the people around him are kind, the person can quickly forget what is bad, as though it were crowded out. Communication with hyperthymic types exerts a good influence on people with an emotionally labile character. A friendly situation also won't only influence these people, but also determines the productivity of their activity and psychological and even physical well-being.

### The Demonstrative Character

The engineer Aleksandra Ivanovna was instructed to reproduce some documentation. One hundred copies would have been enough, but exhilarated by the fact that she had received her instructions from the directors themselves, she so exaggerated its importance that soon everybody was forced to agree with her: of course they needed no less than 500 copies.... The people around her did not go into the matter very deeply, but they had the feeling that something unusually important and remarkable was happening. Aleksandra Ivanovna's "significant smiles," her hints at movement, the fuss and bustle around the materials that were being reproduced contributed to this.

One must say that there was almost no need to reproduce the papers. But they moved from place to place so frequently and with such importance that the workers had firmly rooted in their memory the opinion that Aleksandra Ivanovna was an exceptionally hard-working, efficient and irreplaceable person.

The basic feature of the demonstrative character is a greater than average ability to crowd out a rational, critical view of themselves and, as a result of this, to have demonstrative, somewhat "dramatic" behavior.

This "crowding out" is extensively manifested in man's psyche, and especially clearly in children. But a child plays, for example, at being an electric locomotive engineer and he can get so taken up in his role that if you address him not as an engineer, but by his name he can become offended. Obviously, this kind of crowding out is related to developed emotionality, a vivid imagination, weakness of logic, the inability to see one's own behavior from the outside, and a low level of self-criticism. All this sometimes remains in adults. A person who has a demonstrative character easily imitates the behavior of other people. He can represent himself as anybody he would like to see. Usually these people have a broad range of contacts; as a rule, their negative features are not too markedly developed and people love them.

The striving for success and the desire to look good in the eyes of others are so marked in this character that one gets the impression that this is the main and perhaps even the only feature. But this is not true. The key feature is still the inability at certain moments to look critically at themselves from the outside. In order to be convinced of this it is sufficient to look at what the demonstrative personalities do in other situations. For example, when they are involved in the role of a sick person. Or defying apparently amoral behavior they display a lack of discipline, and so forth. In these cases, regardless of the desire to succeed in another situation, they can blame themselves for something that was clearly disadvantageous in the preceding role. But the one is not related to the other, there is only a switching from one role to the other. Such a person can act in different ways with different people, depending on how he would like to be seen.

With experience and when the capabilities of a person of a demonstrative character are in evidence the peculiarities of other people stand out well. They see the attitude toward themselves, they adjust to it and try to control it. It should be noted that frequently they do not succeed. They develop whatever attitude toward themselves they want, and sometimes they actively manipulate people. The development of this type of features, especially in combination with a low level of intellect and unsatisfactory education, can lead to adventurism. An example of this is the not unknown situations with the "delivery" of materials that are in short supply, for instance automobiles. The people who are deceived in these cases are let down by the fact that they are oriented toward their internal criteria for evaluating a lie--they try to determine whether or not in the adventurer's internal world there are not some alarming details: confusion, lack of coordination of ideas and so forth, which would make it possible for them to suspect him of lying. But since after he has entered a role the adventurer does not internally feel he is lying, people can easily be deceived when evaluating his behavior.

A "developed" demonstrative personality, if one can call it that, also forms its own world view, easily "pulling out" from the accepted views that which suits this type of character most. They assimilate, the idea of false modesty, and the admissibility of praise of them, they turn away from stagnation and the rationalism of those around them, and they allow hints about their being among the select few.

It is difficult for such a person if he ends up in a collective which does not take into account his personal and psychological uniqueness. And yet this uniqueness really does exist! If the people around him are cold, formal, and do not notice him, the person begins to behave in a demonstrative way: he draws attention to himself, and makes scenes, which is usually condemned by those around him. But how else can a person who lives in images display the uniqueness of his experiences? How else but through images? Obviously, the game that arises in these cases should be regarded as such.

Having recognized the demonstrative character, one should "make an adjustment" to his promises: for frequently this involves self-advertising and entering the role of a person who "can do everything." One must have a sense of where the conventionality of the game is manifested and where one is speaking about the real state of affairs.

Such a person, for example, can be instructed to advertise a product if the other features of his personality do not stand in the way. It is good if a person with a demonstrative character can not only obtain satisfaction from his basic work, but also participate in artistic independent work, then he will have an outlet for his natural gifts.

It is very important for the positive restructuring of such a personality to have a desire to develop the opposite features in himself--the ability to control himself, to direct his behavior in the necessary channels, and so forth. Abstract thinking makes it possible to look at himself from the outside, to evaluate his behavior critically, to compare facts, and to trace his "supersituational" line of behavior. If the demonstrative behavior is sufficiently offset by the opposite features, the person gains a great deal: the ability to analyze facts, the ability to see in his imagination entire pictures and scenarios of the possible development of today's situation, the ability to notice the details of people's behavior and react sensitively to them, and so forth. Under these conditions the demonstrative character manifests its positive features to the greatest degree.

#### The Psychasthenic Character

Petr Nikolayevich P., because of the nature of his work has to work with equipment a great deal. And sometimes it seems that he hides behind it from other people. He is a conscientious and punctual worker, but he is very closed with his work comrades. Once in a while he will ask somebody for a cigarette, but the conversation, as a rule, does not go further than that. The expression on Petr Nikolayevich's face is stern and concerned, but it turns out that a considerable proportion of his worry and fear comes from concern about his own health.

A worker with a psychasthenic character, as a rule, is rational and inclined to analytical, "step by step" processing of information and interpretation of facts through breaking them down and singling out individual signs. But he does not shift over to other measures of reflecting the surrounding world--to the level of images or intuitive grasping of the situation as a whole.

Constant rationalism impoverishes and weakens emotionality. Emotional experiences become faded and monotonous, and they are subordinated to the course of rational constructs. This leads to a situation where, as opposed to the preceding type, one observes a weakness of the process of crowding out. Let us say that a person has interpreted a situation, has weighed all the "pros" and "cons," and has come to the conclusion that it is necessary to act in a particular way, but his emotional motivation organizes his internal world so weakly that doubts are not cast out and the person in any event is held back from action.

The same desires can appear from time to time without being reflected in the behavior, becoming customary and finally even boring. Disturbing topics become the subject of repeated consideration, but this leads to nothing. Doubts can also become customary, and fluctuation between the "pro" and "con" in solving a particular problem can become permanent. As a result, a person of this type typically lacks a firm position. This is replaced by a desire to investigate everything, putting off conclusions and decisions. If you need to interpret a situation rationalistically, have a talk with such a person; he will analyze in depth at least certain aspects, although he may not pay any attention to others.

One should not trust a person with this character to make decisions, especially responsible ones. If he has to make them, it is necessary to give him assistance: consult, assign experts in this problem and suggest solutions, helping to overcome the psychological (and not related to objective circumstances) barrier in moving from the decision to the action. Obviously, administrative work is counterindicated for the psychasthenic. When he finds himself in a complicated, rapidly changing multifaceted situation, for example, the situation of communication, such a person does not have time to interpret it, he can feel restricted, and he can lose his way.

Such a person can improve his character by developing his figurative memory and his emotional side. The imagination makes it possible to reproduce various situations and compare them, drawing correct conclusions even without analyzing all aspects of a given situation. As a result, the need for great mental work falls away and the conclusions can turn out to be correct. The fact is that the analytical approach always involves a risk of failing to take into account various peculiarities of the matter which one can "sense" with indirect perception. The emotions make it possible to combine ideas and unite various areas of experience according to principles of similarity of emotional experiences, that is, act as a force that integrates and organizes the psyche. It is as though emotional evaluations replace rational analysis since they make it possible to reflect a multitude of aspects of the situation. It is known that "without human emotions no cognition of the truth is possible." The development of the emotions smooths out the psychasthenic features.

### The Stalled Character

The new laboratory chief Nikolay Nikolayevich M. began his labor activity when he dragged into his office an immense table and armchairs, and ordered bookshelves, a television set and a tape recorder—in a word, when he did everything to make himself look as authoritative as possible. Nikolay Nikolayevich is a willful person, even stubborn. If he had begun to "push through" a new topic, the workers could rest easy: he absolutely would push it through. But if one were to try to express any doubt about the importance of this topic! The laboratory chief would unceremoniously show him who is boss. Openly expressed love of power, self-advertising and despotism undoubtedly harm his relations with co-workers, but to criticism of shortcomings he usually reacts by creating a stir: he becomes irritated and then everything is the same as it was.

The fact is that in terms of the peculiarities of emotional experiences the stuck character is opposed to the labile character. As D. N. Ovsyaniko-Kulikovskiy writes, "In the sphere of feelings there is a law of forgetfulness" (he has in mind the ordinary changing feelings, and not moral tenets). When we recall previous offense, praise, enthusiasm, disenchantment and so forth, of course, we can imagine our condition, but we cannot experience it again, the intensity of the experience is gradually lost. People of a stalled character are constructed differently: when they recall something in the past, the feelings, in the words of M. Yu. Lermontov, "painfully strike the soul." Moreover, they can become stronger since as they are repeated from time to time they stylize the representation of the situation, transforming its details. Offenses are remembered for an especially long time since negative feelings are experienced more strongly. People with this character are frequently unforgiving, but this is explained not by their intention but by the persistence and slow movement of their experiences.

This slow movement is also manifested at the level of thinking: it is frequently difficult to assimilate new ideas and sometimes it takes days or months to instill a fresh idea in such a person. But if he understands it, he follows it with the inevitable stubbornness. The same slowness and inertia can also be manifested at the level of movements. Such a person walks slowly, as if with pride.

The inertia and the state of being stuck in a feeling, thought or deed lead to a situation where in labor activity there is frequently excessive detailization and increased thoroughness, although something nearby which has not fallen into the sphere of the stalled personality's attention may not receive any attention at all. For example, he is extremely neat, exacting and takes a long time in cleaning up his desk. He places papers and books along the shelves, carefully looking into the slightest details.

As we can see from our example, a manager with a stuck character is not very successful in working with people. But such a person can be entrusted with arranging the shop and giving it an internally organized appearance (if in imposing order again he does not excessively terrorize those around him). It

should be kept in mind that as a result of inertia he can somewhat abuse his power.

Monotonous traumatization by certain circumstances or permanent conditions that cause negative emotions can have a negative effect on a person with this character. The accumulation of negative feelings, which are not only retained but also add to one another, can lead to an outburst. When the person expresses his anger he loses control of himself. Extreme situations can lead to sharply expressed aggressiveness. But the positive emotions, related, for example, to success, lead to a situation where the person becomes "giddy with success," he "wears it," and he is uncritically satisfied with himself.

The life of a person with a stalled character should be sufficiently diverse. Communication with people (and the more the better) will make it possible for him to at least partially overcome his internal inertia. It is of considerable significance for those around him to understand the peculiarities of this character: tolerance of expressing long-forgotten offenses or accusations and an indulgent attitude toward inertia. Do not contradict the more "serious" strivings of such an individual and do not try to reeducate him. Inertia in and of itself does not determine which emotions, positive or negative, "bog down" the person.

It is better to perceive the "boggling down" in positive rather than negative experiences!

#### Conforming Character

Larisa Vasilyevna S., who has good training in the area of mathematics and programming, was given a new task for modeling processes in electrical networks. She tried the suggested algorithm but since it "did not compute" she lost her head. Instead of trying to figure out the problem independently, she began to go to her co-workers for help. But their advice was suspended in air: her confusion, lack of composure and, the main thing, her lack of independence impeded the matter. Actually, Larisa Vasilyevna needed not help, but constant supervision.

As a result the work was not done. Timidity, permissiveness and willingness to do any other job helped Larisa Vasilyevna to avoid punishment; they simply transferred her to a different section. But here too she was still indecisive, disorganized and would throw up her hands at the slightest difficulty.

As we can see, even good qualifications did not help the worker with a conforming character to master the skills of independent work. People with such a character can act only if they have support from those around them. Without this support they lose themselves and do not know what to do, what is correct in a given situation and what is incorrect.

The peculiarity of people with a conforming character is a lack of contradiction with their environment. Having found a place in it, they easily reach the "average statistical" opinion of those around them, they are easily impressed with the most widespread judgments, and they easily follow them.

They cannot resist the pressure of persuasive actions and they immediately give in to them.

People with a conforming character seem to cement the collective. Unnoticed, never standing out, they are the natural bearers of its norms, values and interests. One of the undoubted merits of this type of character is their unobtrusiveness in communication, their natural "knowing," their ability to "dissolve" themselves in the values and interests of the other.

The shortcomings of a conforming character are linked to its merits. Easily submitting to those around them, such people frequently do not have their own opinion. If the opinion of the others around them regarding one issue or another changes, they blindly follow it, without comparing it critically with the preceding one. Even if a person with a conforming character has knowledge that enables him to draw the correct conclusions himself, he most frequently follows the others, throwing off his own poorly manifested "guesses." At best he will timidly try to express them, but if he does not find support from others he gives up.

These may be expressed clearly or they may not, but the internal, deeply felt rules of such a personality are: "Be like everybody else," "Do not get ahead," and "Do not lag behind." It is as though such people set as their goal to be on the sidelines at all times, to be at the golden mean. They avoid bold, challenging acts. Becoming dependent on the opinions, evaluations and views of others and thus forming their own world view, they are conservative and do not want to change things, since this would involve revising their views. Such people rarely change their jobs, and even if their relations are uncomfortable, they usually tolerate them patiently. Workers with a conforming character can be good deputies (assistants), advancing along the job ladder in this role. But they should not be made "chiefs," and they should not be entrusted with independent organization of work. If this happens the person will most likely lose control and might display indecisiveness, right down to the point of subordinating himself to his subordinate in order to find a way out.

The most favorable conditions for these people are when the activity is well regulated. They must know clearly: what must be done, by what time, and in what sequence. If such a person has come under your jurisdiction, you must explain to him clearly your requirements and be guided by them consistently. Then his activity will be more productive and more lively.

It is possible to overcome the features of excessive conformism by training the will. Try to state and express your internal position in your behavior, defend it, and develop strength of character.

#### The Unstable Character

The young worker Aleksandr K. was sent to courses for increasing his qualifications. Among the students in the courses he immediately found friends and discussed the lessons with them. He did not react to the remarks of the instructors. He began to miss classes, spent time in the smoking room, and wandered the streets doing nothing.

When he learned that Aleksandr was wasting his time, his father became involved. It was a familiar situation; the same thing had happened when his son was in school. He spoke with the teachers and asked them to report to him about his son's behavior. He wrote out a program of studies and began to check to make sure that Aleksandr followed it. Soon the situation was normalized.

People of this characterological type have no firm internal principles and their sense of duty and other high human motives are not sufficiently developed. As a result, people of this type are constantly striving for immediate satisfactions and diversions. What precisely will be the object of diversion depends on the particular company in which the person with the unstable character finds himself, the level of development of his personality and other factors. It can be strumming a guitar or spending many hours in idle conversation—they discuss special cases that make them laugh, experience a sense of superiority over others, and it is a superiority of the lowest type, related to ridicule, and so forth.

The desire for satisfactions and diversions can be so marked that the person ignores elementary duties, does not wish to do anything, and is directed only toward consumption. He does not think about how frequently he obtains the good things in life at the expense of others. People with an unstable character overestimate the desire of other people for satisfactions and this seems to them to be the main motive for which everyone lives. "Is it not obvious that everyone wants this?" they ask. The lack of desire to work and the desire to avoid occupations that are not directly associated with satisfaction lead to a situation where in the sphere of diversions they cannot learn anything definite. Or, in their words, they can, but they do not want to. For example, they will not systematically learn to play the guitar, drive a car and so forth.

Such a person is no gift to the labor collective. He performs his duties irregularly and does a great deal under the whip. He ignores those duties which require painstaking work and cannot be done on the run or in a flash. If the manager reduces supervision or decreases the demands made on such a person he immediately sees that he is not performing his duties and does not finish anything. On the other hand, his easy manner helps others to relieve themselves of concern and look at the lighter side of life. But if the collective does not place its demands on him firmly enough, this can exacerbate his slovenliness and neglect for work and obligations. The supervision, however, should not be too strict, for otherwise the person may refute the right of those around him to control his behavior.

A favorable environment for a person with an unstable character can be a collective that takes his interests, enthusiasms and inclinations into account. The organization should be such that the organizing functions, concern for details and the routine part of work are done by others. The person with an unstable character becomes a leader in places where it is necessary to perform pleasant, cheerful work related to diversion. And here he can get way ahead of the others. An understanding of these peculiarities and their correct utilization, and not attempts to reeducate the individual,

which usually turn out to be unproductive, create acceptable conditions for the life and activity of such a person. In these cases his social adaptation is successful.

Attention should be drawn to the way a person with an unstable character influences the brigade (shop, division). Possibly one of the goal-oriented and strong-willed members of the brigade can be entrusted to "check" on the discipline of such a worker. One must say that the need for supervision of the behavior of people with an unstable character can remain throughout their entire life.

#### The Cycloid Character

In the description of the seamstress Nina Ivanovna M., which was given by the section chief, he notes the irregularity of her work. Sometimes everything works for her—the plan is overfulfilled and she is in an excellent mood, and then the next time Nina Ivanovna is vapid, boring, she works slowly and she makes mistakes.

Nina Ivanovna herself has long been aware of her mood swings which are not caused by anything external. It sometimes happens that everything seems bad to her and her mood is such that she is frightened out of her wits, and that is the way it is for a week or two. Then gradually things change, her life seems beautiful again, and Nina Ivanovna is again cheerful and energetic. Her friends at work know this peculiarity of hers and indulge it: if Nina is depressed today, she will soon make up for what has been lost.

The whole problem is that Nina Ivanovna has a cycloid character, whereby there are periodic changes in her ability to work, her activity and her mood. During a phase of elevation these people look like hyperthymic types: they are communicative, they speak rapidly, they easily master new things, they are optimistic, and they are somewhat excited and sometimes even overexcited. In a phase of decline they exhibit the opposite features: the person becomes passive, slow, unwilling to communicate and remain silent more. The person does not want to do anything and everything goes wrong. He is dissatisfied with himself and scolds himself for his lack of vigor and his slowness. The declines and elevations can continue from several days to 2-3 weeks, a month or more.

During an up period these workers display greater capabilities than are usually inherent in them: they easily grasp the essence of new work, they have a good imagination, they cope with new duties well, they easily solve problems that arise, and so forth. During this period they have a sense of the unlimitedness of their capabilities and they overestimate their own personality to a certain degree.

During a period of decline their ability to work deteriorates. The person's thoughts will not "get moving" and it is hard to think. They lose the desire to do anything, their communication decreases and their mood deteriorates.

Managers note the irregularity of the work of their subordinates and criticize them for a lack of stability and laxness in their work. But these

peculiarities are biologically conditioned to a considerable degree and criticism and unpleasantness in a period of decline can only prolong it and make the condition worse. One should not place a person with a cycloid character in sections that require a constantly high rate of work, where everything is linked to a single rhythm (for example, on a conveyor). Possibly, having sized him up, one should not rigidly plan his daily output. In spite of a certain lack of regularity in his work, such a person can, in the final analysis, achieve fairly high production indicators.

During the period of reduced ability to work it is better for such a person to try to avoid difficulties and unpleasantness, and observe the schedule of the day. It is better to reduce the work load and, of course, not take on new kinds of work, to try to improve his mood somehow, and not be too angry at himself for the lack of the qualities of will, his disorganization and so forth.

Overloading of the nervous system, for example in connection with moving to a new place of residence, the need to master new activity and so forth, can easily cause a decline in the mood of people with a cycloid character. Under these conditions, on the one hand, the cycloid inclination toward an extended "gloomy" mood is easily realized and, on the other, the difficulties impede the elevation of activity and mood. Emotional overloading is harmful for such people.

Among the positive features of such a character one can include (in addition to those features which are manifested in the phase of elevation) a certain "continuity" of emotional experiences and good will. Such people are more sympathetic to others if they do not disturb their own condition. Moreover, they easily adopt the positive emotions of those around them. Their emotional position is weighty and visible, and their life of feelings is distinguished by a certain increased force and continuity.

Once you have become familiar with the types of characters described above, do not be drawn into making psychological diagnoses. You need to know them not in order to "make labels," but to gain a better understanding of those around you and, in the final analysis, to create a better psychological climate in production and, possibly, even improve the production process itself.

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## **CONSTRUCTION METHODS IN WEST REPORTED**

Novosibirsk EKONOMIKA I ORGANIZATSIIA PROMISHLENNOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 189-198

[Article by A. S. Belorusov, candidate of economic sciences, All-Union Scientific Research Marketing Institute of the USSR Ministry of Foreign Trade: "What Is 'Turnkey' Construction of Enterprises?"]

[Text] When batched equipment for industrial enterprises and other facilities was purchased both by developing countries and industrial companies of capitalist states during the 1970's-1980's, the conditions of the general contract became widespread, which has been called "turnkey" delivery conditions in Western literature.

According to the definition of the Committee for the Development of Foreign Trade of the European Economic Commission of the UN, a "turnkey" agreement means: "A transaction whereby the contracting agent of the client takes over for the client responsibility for constructing an industrial (or nonproduction) facility and replaces the client in dealing with other corporate bodies participating in the construction of the facility. The contracting agent turns over to the client an industrial facility which is ready for operation according to the conditions of the agreement, specifications and guarantees." Consequently, cooperation under the conditions of the contract means that the contractor is responsible for all the work and deliveries necessary for constructing the facility and turning it over to the client ready for operation.

The responsibility of the contractor according to the conditions of the agreement extends primarily to prompt and high-quality construction of the facility, achievement within the stipulated time periods of the productivity and product quality if the facility is operated by personnel trained from the local population. Usually the commitments also include preinvestment engineering consultation services, fieldwork, topographical photographs of the territory of the facility, the drawing up of maps, seismographic research work, investigation of the area, drilling work, and also predictions of the development of the branch and technical plans.

The volume of delivery and granting of services, as a rule, includes the transfer of technology and "know-how," planning, the delivery of batched

equipment, its installation, startup and adjustment work, and also the planning and construction of auxiliary and civil structures. Thus at the beginning of the 1980's when a shop for rolling steel bars valued at 75 million pounds sterling was constructed under "turnkey" conditions for the state company SONASID in Morocco, the obligations of the general supplier, the Davy Mackey Corporation (Great Britain), in addition to planning the shop, delivering the equipment and training national specialists, included the construction of a residential village for the plant's personnel. The peculiarities of this contract also include having the supplier provide the raw material for the enterprise that was constructed, steel bars, for 5 years after the shop was put into operation.

When fulfilling contracts under "turnkey" conditions the general contractor can be the owner of the technology that is turned over or the main supplier of equipment, or the plan-designer, the so-called "engineering" company. Sometimes, depending on the nature of the facility that is being constructed, it is preferable for the role of the general supplier to be performed by the planning and design company, which is responsible for achieving all the planned technical and economic indicators.

In recent years for constructing large enterprises they create consortium firms which have the possibility of delivering a wide range of sets of equipment with financing conditions that have been official to the purchasers. In their desire to acquire the order participants of consortiums include in their makeup financial institutions, banks and insurance companies which organize ways of offering the purchasers financial assistance and credit, sometimes even on an interstate level. They help the consortium to obtain a guarantee of export credit from state financial organizations. Hermes in the FRG, Eximbank in the United States, KOFAS in France and so forth, the eight international financial organizations for financial transactions, may also organize financing with commercial banks.

The participation in consortiums of transnational corporations and the firms with various activities that are included in them facilitates commodity exchange and compensation transaction, in which clients experiencing a shortage of currency resources are interested in many cases. The shortcomings of the large consortiums include, first and foremost, the lack of flexibility and efficiency in solving immediate problems, the need for lengthy consultations and exchange of information, and the surmounting of internal differences of opinion. At the same time, according to the conditions for the construction of "turnkey" enterprises, the sole and general responsibility for the construction of the facility and its release for operation is placed with one corporate body--the general contractor. The latter has the right to transfer some of the work and deliveries to subcontractors and subsuppliers. In 1982 the consortium of Japanese firms "Toyo Engineering" and Marubeni, which received an order from the Egyptian company "Egyptian Petrochemical" for construction under "turnkey" conditions of a plant for producing 100,000 tons of vinyl chloride monomer a year, took on the responsibility in keeping with the conditions of the contract to put the plant into operation in 1985, that is, 3 years after the contract was concluded.

In recent years, because of the aggravation of the competitive struggle on world markets for machines and equipment, the contractors, in order to defeat their competitors, frequently take on additional responsibility that extends to the stage of initial operation of the facility that has been constructed. Thus in "turnkey" contracts with the conditions "for prepared products," they stipulate the duty of the contractor to provide for operation of the enterprises until they reach their planned capacity and assimilate the output of products of the coordinated products list, quality and quantity.

An even more responsible form of cooperation for the contractor is the construction of enterprises under conditions for "output and sale of products." In this case the contractor provides not only for the operation of the enterprise during the initial period, but also the sale of its products.

Italian firms that deliver automated lines for processing plastic and rubber under "turnkey" conditions are successful on the markets of many countries. While holding fourth place in the capitalist world (after the FRG, the United States and Japan) in the production of machines for processing plastics and rubber, the Italian companies ship up to 50-70 percent of these machines abroad, mainly to developing countries, utilizing the advantages of deliveries under "turnkey" conditions.

The main advantages for importers of purchasing sets of equipment under "turnkey" conditions can include the following: imported equipment and progressive technological processes, as a rule, have already been worked out at the plants of the supplier and have approved their effectiveness and reliability. In addition to the basic equipment, the delivery volume also includes modern construction equipment, and the technical documentation includes "know-how"--advanced methods of construction of the facility, installation and operation of equipment. The reason why enterprises are constructed more rapidly under "turnkey" conditions is that the planning of the facility and its construction are included in the commitments of one corporate body--the general contractor. He can change the sequence of the performance of the work and combine operations. Moreover, there is less of a probability of conflicts between the planners and the builders.

An essential advantage for the client when enterprises are constructed "turnkey" is that all the responsibility for the construction and startup of the facility is placed on one corporate body--the general contractor. The client usually does not bear responsibility for disagreements that arise during the course of construction or when the equipment is being put into operation. The existence of just one contracting agency with whom the client deals facilitates the solutions to all disputed questions that arise during the process of the construction of the facility.

At the same time, the construction of facilities under "turnkey" conditions has a number of shortcomings for the client. In the first place, the cost of this kind of construction is usually much higher than when individual kinds of equipment and services are purchased separately. The cost of "turnkey" construction of the entire facility is usually stipulated in the contract as an overall sum without having the cost broken down into individual items according to the kinds of equipment and services that are delivered. Even in

the rare cases when the contracts indicate the cost of individual kinds of equipment and services, it is very difficult for the client to determine the sum of individual additions in each stage of the fulfillment of the plan since the general contractor during negotiations really insists on discussing only the full costs of the "technical packages of equipment and services."

With the expansion of the commitments of the general contractor, the problem of the price aspect is aggravated. In addition to expenditures for training technical personnel of the client and additional services of specialists of the general contractor for operating the facility, the general contractor tries to receive compensation for the additional risk. As a result, the cost of the contracts on the basis of services "for ready products" and "for the output and sale of products" increase sharply. In these cases it is especially important for the client to find ways of accounting as closely as possible for the additional expenditures and comparing the additional advantages ensuing from the agreement with them.

Contracts with "turnkey" conditions frequently establish "sliding prices" for imported equipment, materials and labor force. The basis for determining these prices, as a rule, are price indexes published in periodicals of industrial capitalist countries. During the 1980's the price indexes for equipment and labor force show a tendency toward a fairly rapid rise.

Among the essential shortcomings for the importer of "turnkey" contracts one should include the possibility the general contractor has of including the volumes of deliveries of equipment sets of equipment for which there is no demand on the world market.

In certain developing countries there is the conviction that the construction of enterprises under "turnkey" conditions does not always contribute to scientific and technical progress. The construction of enterprises under these conditions usually involves a minimum of participation of the client. The general contractors from industrially developed states are inclined to regard the agreements for "turnkey" conditions only as transactions that envision the payment of a certain sum for the creation of a facility. As a result, the client's specialists are not familiar with the equipment and technological processes of the constructed enterprise at which they are to work. The problem is aggravated by the fact that after the facility is released for operation the client usually has no levers left which he can use to influence the general contractor, and the latter is not obligated to provide for satisfactory operation of the enterprise in the event of disagreements during the postguarantee period.

In order to avoid such situations the client tries to obtain long guarantee periods. Here the guarantee should pertain to the functioning of the facility as a whole as well as its individual sections and aggregates.

The experience in constructing industrial enterprises with "turnkey" conditions shows that a relatively reliable means of guarantee by the general contractor of the quality of the products and the achievement of the planned capacities of the enterprise that is constructed is a compensation agreement. In this case the general contractor is more interested in the effective

operation of the enterprise since he receives payments for the equipment and services through deliveries (partially or completely) of prepared products from the facility that has been constructed.

On the basis of experience in constructing industrial enterprises under "turnkey" conditions in developed countries, experts of the Center for Transnational Corporations of the UN have developed a number of recommendations for companies from developing countries which are beginning to have enterprises constructed under "turnkey" conditions. According to the international practice, it is important for the client for the proposals of the supplier to indicate the prices with the maximum possible breakdown for the various kinds of equipment and services (planning-design work and so forth). Then he has the opportunity to determine the fairness of the price level requested by the general contractor, to analyze them and in negotiations make sure that the contract prices approach the world level.

The client has its own participation: in analyzing the technical and economic substantiation for the construction of the facility (in order to be confident of the effectiveness of the future enterprise); in considering proposals from subcontractors and purchases of equipment (in order to select the most advantageous from the competitive proposals); in selecting the subcontractors (although the final decision remains with the general contractor), and in selecting technology and "know-how."

International experience shows that the technology of the enterprises that construct under "turnkey" conditions should be based on processes that have already passed through the stage of production assimilation at enterprises of the general contractor. Excessive innovation in technology is usually undesirable because of the difficulties of adaptation to local conditions, the training of national personnel and the future dependence on the general contractor for repair of equipment and delivery of spare parts.

Before signing the contract the client familiarizes the general supplier with local conditions in detail since a lack of knowledge of these can lead to an overestimation or underestimation of expenditures and time necessary for constructing this facility. Local conditions mean the degree of development of the industrial infrastructure (transportation, communications, electricity, water and gas supply and so forth), the availability and qualifications of a local labor force, customs legislation and currency regulation, technical standards, local norms for technical safety and protection of the environment, the competence of local construction, transportation and other organizations whose services will be required in fulfilling the contract under the "turnkey" conditions as well as climatic conditions.

If there is a possibility of reaching an agreement with the general supplier concerning the compensation form of agreement, the client usually takes advantage of this possibility. Compensation agreements in the construction of "turnkey" enterprises have a number of advantages for the client. In the first place, the adoption of the compensation form of agreement by the general supplier shows his confidence in the effective functioning of the facility that is being constructed and the high quality of its products. In the second place, the compensation form of payment is a kind of guarantee of the

effective functioning of the facility. And, of course, the compensation agreement contributes to economizing on the currency resources of the client.

At the present time, "turnkey" conditions are attractive not only for developing states, as was the case in the 1960's and 1970's, but also for industrially developed countries. This phenomenon was brought about by the complexity of modern equipment and continuous automated processes. To install, adjust and put these aggregates into operation independently, without the help of the supplier of the equipment and technology is beyond capabilities even of consumers that are most highly developed in the technical sense.

Today there is not a single supplier who can "turn over" to the client a solution to all the organizational and technical problems that arise at a plant that is under construction. Blind copying of foreign experience, as a rule, does not lead to the desired results. There is not a single set of instructions or description that can convey the content of "know-how," including many years of experience of workers and engineering and technical personnel in performing all production operations in keeping with the technology that is turned over. New technology can be mastered at a plant that is under construction only by training local personnel and conducting scientific research and design developments locally.

For prompt startup of equipment and the enterprise's achievement of its planned productivity, the client needs help in assimilating the equipment and technology throughout the entire period of construction of the plant. It is precisely the stage of assimilation of production that is most frequently the cause of delay in the startup of enterprises because of inadequate means and unkindly training of national personnel.

In recent years, with the complication of technological processes in the design of sets of equipment, more attention has been devoted to training specialists for enterprises that are under construction. The firms that supply the equipment and technology in keeping with the contractual commitments include national personnel in the course of training for assimilating the system of service and repair of equipment, the organization of continuous supply of the equipment for its raw material and energy, the insurance of norms for technical safety and protection of the environment from pollution.

The final stage of the training is devoted to control of product quality. The suppliers of the equipment and technology in this stage turn over to the importers the methods for product control and organization of a technical control service.

The research work and the training of national personnel involves the planning companies and the manufacturers of the equipment, and technical consultants or independent scientific research institutes and universities. Here the manufacturers of the equipment play the major role in training personnel for the new plant, and scientific research institutes and universities offer services mainly for conducting additional research. With their help at the enterprise under construction they organize scientific research centers whose

functions include constant improvement of technological processes, products list and product quality.

Thus a wide range of national and foreign organizations participate in the assimilation of technology and operation of equipment at plants that are under construction. As the time for the release of the enterprise approaches this range narrows, and by the time of startup most frequently there are only the trained personnel of the plant and a small number of foreign consultants.

Practice shows that even countries that are industrially highly developed make large expenditures on training their own specialists when assimilating imported equipment and technology. Thus the American corporation "Republic Steel" spent about \$5 million on training its own specialists when it purchased from the "Mannesman-Demag" concern (FRG) machines for continuous casting of blank pieces under "turnkey" conditions. Specialists of the American corporation were given training in the work positions of the Mannesman-Demag concern plants in the FRG and enterprises of the Stelco Company in Canada, where similar sets of equipment are operated.

In subsequent years, in order to save money, certain clients prefer importing equipment not through "turnkey" construction, but through concluding individual contracts for separate kinds of equipment, its installation and adjustment through the forces of foreign companies. Frequently instead of these contracts licensing agreements are concluded, which stipulate the possibility of local planning-design and machine-building firms participating in certain work.

Under the conditions of "turnkey" contracts in recent years local firms have participated in the fulfillment of the contract. An example is the construction of machines for continuous casting of blank pieces (MNLZ) under "turnkey" conditions in the United States. In December 1983 they put into operation at a plant in Stilton (United States) a three-branch MNLZ of the curvilinear type for casting high-quality steels with a productivity of 1.3 million tons of blank pieces per year. The contract cost of the MNLZ was \$85 million.

In the 1980's in the countries that have an industrial base, the construction of industrial facilities with the help of foreign firms under "turnkey" conditions takes place most frequently with the participation of local forces in order to save on currency. The Soviet Union is also constructing several plants on the basis of imported equipment under analogous conditions.

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## IMPORTANCE OF HEALTH AWARENESS STRESSED

Novosibirsk EKONOMIKA I ORGANIZATSIIA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 199-209

[Article by Ye. M. Bukhvald, candidate of economic sciences, Institute of Economics of the USSR Academy of Sciences (Moscow): "Personal Health Programs Needed"]

### [Text] The "Human Factor" and Social Wealth

In Soviet economic science there is increasing reinforcement of the viewpoint that a comprehensive evaluation of the wealth of a socialist society is impossible without taking into account the level of spiritual and physical development of its aggregate worker [Footnote 1]. "What else is wealth," wrote K. Marx concerning a communist society, "than the absolute manifestation of the creative gifts of man....," "...the real wealth," K. Marx also emphasized, "is the developed productive force of all individuals" [Footnote 2]. This important point of Marxism is realized in practice in such concepts as the "educational and vocational-skill potential" and the "health fund" of the workers of a socialist economy. The individual character of these goods and the fact that they cannot be separated from the material bearer--man (my health, my education and qualifications) does not contradict their role as elements of the total social wealth. In the first place, they are organically included in the process of socialist expanded reproduction and are a necessary prerequisite for it. Second, the specific results of the development of man's material and spiritual nature are also generated by expenditures of public labor, just as traditional elements of wealth are (fixed capital, supplies and so forth).

Labor that is directed toward the formation and development of man as a worker has by nature a number of peculiarities. The basic one is that here expenditures of labor "on oneself" on the formation of man as an individual, expenditures which simultaneously become an important source of proliferating public wealth, assume a great, sometimes decisive significance. The interests of the individual and the society are closely interwoven. If the growing efforts of the society to protect and maintain the health of its citizens (increasing the number of physicians, polyclinics, hospitals, supplying them with modern therapeutic and diagnostic equipment) were to contract the tendency of developing an obviously unhealthy, sedentary way of life (abuse of

alcohol, smoking, hypodynamia and so forth) it is difficult to count on having these efforts end up with any serious success.

In his research the well-known Soviet economist and demographer, Professor M. Ya. Sonin, focused attention on this important peculiarity which is still not sufficiently taken into account in our practice of social planning. He repeatedly noted that the development of a healthy way of life and goal-directed systematic health improvement activity comprise the necessary element of our socioeconomic policy which actually returns its part of the society's expenditures on the development of public health and the maintenance of people who are temporarily disabled [Footnote 3].

During recent decades, thanks to the efforts of the Communist Party of the Soviet State, we have achieved certain successes in the area of public health. During the period from the 1960's until the 1970's the average lifespan of the population of the USSR increased from 64 to 70 years. The labor potential of the workers increased also as a result of the reduction of illness. During the years of the 10th Five-Year Plan alone we managed to reduce losses of working time because of illness related to temporary disability by 104 days per 100 workers. This means that in 5 years the national economy saved 2.5 million man-years of labor, which created additional possibilities of expanded reproduction of material and spiritual goods. "It is a matter of primary importance, it is emphasized in the CPSU Program, "to strengthen the health of Soviet people and increase the length of their active life."

Still, during the course of the 1970's the life expectancy of the USSR population remained the same. The indicator of the average length of the labor life stabilized and even decreased somewhat (for men) [Footnote 4]. A certain role in this was played by the sociodemographic consequences of the Great Patriotic War, but to an even greater degree it was the consequences of the so far inevitable "technological" changes in nature and society. For example, scientific and technical progress in production leads to releasing man from heavy labor that is beyond his power, on the one hand, but it pollutes the environment and contributes to the development of a sedentary way of life and psychological stress, on the other. Moreover, certain consequences of scientific and technical progress that are negative to the health can and should be eliminated in the sphere of production itself (improvement of purification complexes, introduction of waste-free technologies, waste-free productions and so forth) while others are compensated for outside the sphere of production: active changes in the model of behavior, consumption, organization of leisure and so forth. Thus the life expectancy and level of illness of the population could appear more favorable if at the same time assistance were rendered to the mass health improvement movement among the population, if this specific form of "labor" for the good of society were given the proper public recognition and support.

#### "Personal Health" in the Interests of the Society

In recent years in the majority of developed countries of the world the opinion has prevailed that improvement of the health of the population is among the most important national economic problems. West German specialists have calculated, for example, that the total losses from illnesses and their

consequences on a nationwide scale amount to 65 billion marks annually. This is approximately 2 months' earnings per worker. This means that on an average of 2 months a year each worker in the country works exclusively to cover outlays related to illness. Specialists in the FRG think that the situation could change sharply with increased motor activity of the population, a change in the customary sedentary way of life and proper nutrition--these factors can slow up the process of man's aging by 10-20 years.

In this connection the FRG has developed and is implementing the program "Trimming-130," whose goal is to draw the broadest segments of the population into physical activity.

Since 1971 in Austria they have been carrying out a similar complex of health measures under the slogan "Do it with us," in Denmark they are conducting a national campaign called "Run and get in shape," and in Australia since 1975 there has been a health program called "Let there be life," which is intended for all the country's population. A great deal of experience in mass health campaigns has also been accumulated in socialist countries, particularly in the GDR.

What new principles are contained in these health improvement programs?

In the first place, emphasis is on the fact that the mass programs are intended not simply "to improve health," but on the whole to influence the way of life of all age groups of the population, to make it physically active, and to fill it with new sources of positive emotions, new forms of communication and so forth. In the second place, this is a sober accounting for the fact that the popularity and, consequently, the results of mass health improvement campaigns do not come of their accord. As specialists of many countries have been forced to recognize, simply the idea of "benefit to the health" cannot bring most of the population to change their usual way of life which, unfortunately, is basically unhealthy. To do this certain conditions and incentives are necessary. We should like to discuss these in greater detail.

First of all, the advertising and informational aspect is extremely important. Thus the "Trimming-130" program is well publicized in the press and on television in the FRG. The first television program devoted to this was seen by 25 million people or more than 40 percent of the country's population. More than 700 newspapers and magazines regularly publish material about the implementation of the program and posters and brochures are disseminated free of charge. This "information boom" informs public opinion, as a result of which participation in the health improvement measures is becoming prestigious and fashionable--in the best sense of this word.

The second important aspect is the need to take into account in the mass health improvement program the specific features of the needs and interests of modern man. Specialists think that all elements of such programs should produce more than just physiological benefits for man. The least chance of success is found in health complexes that remind one of the monotonous and boring physical culture classes given by a mediocre instructor. On the contrary, popularity is being achieved rapidly by those areas which, in addition to the motor activity, give man emotional satisfaction and correspond

to his spiritual-cognitive and aesthetic interests (this, in particular, explains the unusual popularity of aerobics) and also a feeling of communication and collectivism. It is known that a considerable proportion of the active members of running clubs or hiking on days off are looking not only for the opportunity to hike or run, but also for new acquaintances, and new forms of communication and leisure. The specific nature of these interests also determines the concrete content of mass health improvement programs. For example, the Trimming-130 program includes 17 kinds of sports (of course, sports that everyone can participate in, and not races for records), but preference is given to three kinds that correspond most to the very nature of the mass health improvement campaign: cross-country running, swimming and tourism.

In many countries recently more significance has been attached to tourism as a health factor which favorably combines physical exercise and positive emotions, and develops a sense of collectivism and free communication. In Austria tourism occupies first place among all kinds of sports that are popular among the population. Since 1979 within the framework of "Do it with us" program they have been conducting the nationwide "Austrian Tourist Shoe" campaign and quite recently they began another campaign--the "Austrian Tourist Bicycle." The organizers of the campaign are concerned to make sure that in all places of leisure (hotels and so forth) there are always posters, directions and maps of forthcoming campaigns. One of the leading newspapers in the country, KURIR, publishes tourist maps at the end of the week as an appendix.

Finally, the third and decisive factor is the creation of the necessary material conditions and incentives for the success of the national health improvement program. In capitalist countries the high cost of medical service is a powerful stimulus for the dissemination of these programs. At the same time it is obvious that efforts in the area of organizing public health work among the population in the final analysis add up as a significant economic advantage for the society, regardless of how the expenditures on treatment are paid for--from centralized funds or from the pocket of each patient individually.

#### How To Encourage Good Health?

Professor M. Ya. Sonin in his work repeatedly raised the question of how and in what form one should encourage those who through their "labor" for personal health contribute to the achievement of the social economic effect. There arose, in particular, the idea of incentive through paying for part of the cost of the medical certificates that were "saved" as a result of the personal health factor as compared to some average level of illness for the given occupational or age group of workers. It would be equally socially justified to introduce partial or complete payment for therapy for people who have lost their health or their ability to work as a result of chronic alcoholism, smoking, injuries sustained in an intoxicated condition and so forth. But it seems that the most effective stimulus might be active public support and assistance to the "personal health" movement. So far such support is provided on a fairly modest scale, fragmentarily, and without a unified organizational basis. As before, preference is given to the traditional mechanism for

"large-scale sports." Its unchanging attributes are narrowly specialized sections that are oriented toward records and record breakers, immense stadiums constructed for a kind of "division of labor" between the sportsmen and the passive spectators (the latter are the absolute majority). Large-scale sports, of course, should develop also, but not instead of and to the detriment of the material and organizational base for the personal health movement.

The material base for this should be not sections, but public clubs that are available to people of all ages and with various forms of participation. These clubs, in addition to general health goals, can also pursue other social and cultural goals (communication and various mass measures). We need not only large stadiums, but first and foremost city and suburban health complexes that are close to the place of work and residence and are equipped not for spectator sports, but for year-round service for amateurs of mass physical culture and health activities--running, skiing, bicycling, tennis and so forth. "...To improve the organization of the leisure of the workers, especially youth, to create conditions that provide for rational utilization of free time, to develop a network of clubs for various interests...." This is what we are called to do by the decree of the CPSU Central Committee, "On Measures for Overcoming Drunkenness and Alcoholism."

We have experience in creating such bases for personal health, but it must be supported and disseminated. An example might be the new physical culture and health complex of ZIL in Moscow [Footnote 6]. Located in one of the entryways of the plant, it is prepared for receiving workers immediately after their shift in order to help them get rid of their fatigue and acquire a feeling of cheerfulness and health. The complex includes two swimming pools, an exercise room, medical offices and a cafeteria. Another example is the new Moscow physical culture complex, "Labor Reserves." In addition to students at the PTU, the complex serves hundreds of residents of the large microrayon. Its services include room for light athletic events, swimming pools for adults and children, exercise rooms, exercise machines and a medical rehabilitation center.

But on the whole the population's needs for resources for personal health work are far from fully satisfied. The decree of the CPSU Central Committee of 12 June 1985, "On Measures for Improving the Utilization of Club Institutions and Sports Facilities," emphasizes that "institutions of culture and sports are slow at developing an independent basis, and as a rule, they are oriented only toward conducting spectator measures." "It is recognized as expedient," it is emphasized in the decree, "to create amateur associations and clubs for various interests on the basis of individual membership with the payment of dues." "It is suggested that cost accounting physical culture-health associations, combines and schools of health be created and that they be responsible for providing the population with physical culture-health services, organizing the work of subscriber groups and consultative-methodological points." In this connection the construction of new physical culture complexes can be augmented by reequipping the premises that are evacuated in buildings with old construction. For example, readers from Kiev write to PRAVDA concerning the need to reequip for physical culture and health complexes the facilities which until recently were occupied by beer bars in

the city [Footnote 7]. "...In all ways to support the initiatives of labor collectives, voluntary sports societies and the population in constructing the simplest sports facilities...."--it says in the decree of the CPSU Central Committee, "On Measures for Overcoming Drunkenness and Alcoholism."

It would also be expedient to maximally adapt for daily health needs the territories of parks, stadiums, exhibition complexes, recreation zones and the premises of housing operations offices. We should also build dressing rooms, trails for cross-country running, bicycle paths, lighted ski slopes, and so forth. Take, for example, the territory of the exhibition of the achievements of the USSR national economy in Moscow. It is an immense, well-constructed and lighted territory which is practically empty in the evenings, although with minimum expenditures it could serve as an excellent base both for runners and for skiers and for bicycle riders. Today the recreational resources that could be used as a material base for the personal health movement are scattered. Their "masters" are the AUOCTU (management of health resorts, Central Council for Tourism and Excursions), the Committee for Physical Culture and Sports, culture divisions of local soviets of people's deputies, and also many branch ministries and departments. It is necessary to take an inventory and consistently put to use the public health capacities of all sports installations, recreational institutions, cultural institutions, and so forth, regardless of the department to which they belong. Daily work in the area of public health for the population should be a mandatory task for these institutions.

It is quite important for the success of the personal health movement which organizational form it assumes. In our country it has long been correctly considered to be the unionwide cultural complex GTO (Ready for Labor and Defense of the USSR). But in its present form, in our opinion, it can no longer satisfy the ideas about a modern nationwide health improvement program. The nuances of passivity and limitedness that are inherent in this complex (the norms have been met--so good-bye) do not contribute to its popularity. In any case, the complex does not exert an appreciable influence on the condition of the sports-health and certainly not the personal health work among the broad segments of the population. It is difficult to find information about successes of this complex in the central press.

It would seem that the basic provisions of today's GTO complex should become a part of a broader national health improvement program in which decisive significance would be attached not to the achievement of various sports and technical norms, but the mass nature and permanence of physical activity of the majority of the population, regardless of their age, sex, professional activity and so forth. This program should proceed from the need for extensive public support and assistance to all forms of the personal health improvement movement, planning and management of this process as organically interconnected elements of the policy of the socialist state in the area of protection of the health of the Soviet people.

What do we envision as the basic elements of this program?

The program and, consequently, the resources at its disposal should have a single authoritative agency in charge. This agency could be commissions for

health work among the population under the executive committees of the soviets of people's deputies. These commissions could take over some of the functions of today's divisions for physical culture and sports and could overcome the population's attitude toward mass health improvement work as something secondary. The support point in the work of these commissions should be not sports sections, but precisely the "clubs for personal health improvement." (From my own work experience I can say that such contests as "section," "stadium," "competition" and so forth purely psychologically have a frightening effect on people of middle and old age who are inclined toward elementary physical activity but are embarrassed by their lack of training, their awkwardness and so forth). Such clubs could be formed as clubs for special interests (the club for runners, the club for bicyclists); as comprehensive health improvement clubs of enterprises, organizations and housing offices, and so forth.

The second support point would be composed of city and suburban health bases and complexes. And the third would be medical consultation centers in which it would be possible, taking into account the age, the condition of the health and other individual factors, to obtain consultation concerning expedient forms and a regimen for personal health improvement work.

The creation of a support network for the movement for personal health improvement requires, of course, certain material and financial expenditures. But this, it seems, is only a minor thing as compared to the economic effect that the society would obtain: it includes a reduction of the indicator of illness and increased ability to work on the part of the workers in the socialist economy. Moreover, with all the need for centralized material support, one can still find other sources of expenditures for personal health improvement. Thus one can use some of the earnings from the spectator sports measures and also the funds of the enterprises and the population. In any case, we assume that health clubs and medical consultation points should function on a cost-accounting basis and render both free and preferential paid services.

This, of course, does not exhaust all the aspects of the mass health program. No less important is advertising and information work, and saturation of the market with the necessary sports equipment that is still in short supply (clothing, footwear, bicycles, modern tourist equipment and so forth). But the main thing is the support of enthusiasts of the national health program on the part of state and public organizations. And the reward will be a weighty economic and social effect--the "health fund" of the members of the socialist society. "In strengthening the health of the population and harmonious development of the individual..." it is noted in the CPSU program, "increased importance is attached to physical culture and sports and the introduction of these into daily life. It is necessary to arrange things in such a way that every person from youth is concerned about his physical improvement, has knowledge in the area of hygiene and medical assistance, and leads a healthy existence."

In this article we have only sketched the outlines of the solution to the problem. It would be good to hear the opinion of physicians, sociologists, planners, administrators and ordinary citizens who are already engaging in

personal health improvement and have accumulated a certain amount of experience here.

#### FOOTNOTES

1. "Sotsialnye problemy v perspektivnom planirovani" [Social Problems in Long-Range Planning], Moscow, "Ekonomika", 1982, pp 195-196.
2. Marx, K., and Engels, F., "Soch." [Works], Vol 46, part 1, p 476; part 2, p 217.
3. See, for example, the article by M. Ya. Sonin, "Running With Obstacles," in EKO, No 10, 1982.
4. Golovtsev, V. V., Korshagin, V. P., and Shilenko, Yu. V., "Zdravookhraneniye i narodnoye khozyaystvo" [Health Protection in the National Economy], Moscow, "Znaniye", 1978, p 26.
5. The figure "130" in the name means that with the given pulse rate, in the opinion of the authors of the program, one achieves an adequate load on the muscles and blood vessels.
6. See MOSKOVSKAYA PRAVDA, 2 March 1985; 16 March 1985.
7. See V. Cherkasov, "Next to the Home," PRAVDA, 15 April 1985.

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## REGISTRATION OF INVENTIONS SATIRIZED

Novosibirsk EKONOMIKA I ORGANIZATSIIA PROMYSHLENOGO PROIZVODSTVA (EKO) in Russian No 12, Dec 86 pp 210-213

[Article by G. B. Chernikov (Moscow): "How They Prevailed Upon Chelvak"]

[Text] When Chelvak submitted an application for an invention the entire institute became extremely excited; the event was discussed at all levels, from the smoking room to the directors' office. The act of the senior scientific associate was definitely extraordinary.

You might ask if the creation of an invention is really such a rarity. Of course not! The thing is, however, that in Chelvak's application he did not name a single co-author! Read my lips—not a single one! I know, I know that not many people will believe me and some will even start laughing, but I must confirm this unheard-of phenomenon. But yet an invention without co-authors makes no sense at all. It is fruitless, like a beautiful but unpollinated flower, you will exclaim. That is all true. And, nonetheless, Chelvak played such a trick!

First our patent expert Prototipova talked with him:

"Look," she opened the instructions in front of him, the bonus for an invention goes up to 200 rubles, but for one author no more than 50. Do you understand?"

"Well, so what?"

"Nothing! Now a question for your quick wit: What is 200 divided by 50?"

"Well, 4," Chelvak frowned.

"There, you see! From above," she gazed at the ceiling, "they had already envisioned ahead of time: in any invention there should be a minimum of three co-authors, not including the author. Do you think that there are fools sitting up there? No, you tell me: fools, yes?...."

Chelvak avoided a direct answer to this precisely stated question and, having put out his cigarette, muttered:

"I do not know who is sitting up there, but I thought up this invention myself."

If Prototipova had known how far Chelvak's stubbornness went, she would not have tried to take him on. But the poor woman did not know and she lost a full hour without accomplishing anything. And an hour alone with Chelvak is an immense expenditure of nerve cells.

The invention turned out to be significant and they decided to discuss it at a seminar. First everyone praised the innovation, noted how economical it was, how promising, but then the boss asked:

"Do you intend to introduce this yourself? If so, keep in mind that nothing will come of it. This requires somebody higher up than you. Or perhaps you think that someone would like to push through another's innovations, that somebody is burning with a desire to make you rich?..."

Chelvak's nod confirmed this. This is what he had been counting on.

Seeing this incredible naivete, everyone smiled and, vying with one another, tried to persuade the inventor that a person could do nothing alone, that this is an age of collective creativity, that part of the remuneration, although less than the whole but still more than nothing and so forth, which one could discuss in such a case.

But Chelvak did not give in and held his own:

"I thought of it, and I am the author.

He was as stubborn as a mule, for the life of me! So the seminar proceeded in vain.

After a couple of days the boss called me in and said:

"I know that you are friendly with him. Try to convince him that an advantageous innovation can be wasted, you yourself understand--it is a pity..."

I understood it all and promised to help. But how could I do that? I decided to tell the ne'er-do-well a little about the future.

"Can you imagine the course of future events?"

"What is there to imagine? They will send the application to the Institute of Expertise, they will look at it, they will see that it is good, and they will recognize it as an invention."

"No, my friend. First they will make suggestions for you in our office."

"But I do not have to follow them!"

"Do not," I answered, "make me laugh, you fool! Then they will draw up a new application which is a good refinement of yours: Well, they will adjust some component or add some wheel, a little of this and that...."

"But that will make it more expensive and not as good," the stubborn man threw back his head and laughed.

This is the real Chelvak with his truisms from the past century. His eyes had already started to sparkle and something else—he would start to speak about the importance of reducing the cost, and increasing the effectiveness and reliability.... Before it was too late it was necessary to bring this crazy man back into the world, and I increased my pressure:

"And who will that sway, my unhappy Edison, that is more expensive and not as good? Whom? Understandably, the savings will be less than with your version. But so what? Then all the money for the introduction will go to the new authors. Less is better than nothing, no? What do you think?"

Chelvak frowned and remained silent: he was able to count. Still I developed my attack.

"For this same reason they will hurry and send the new application to the board of experts, and yours will lie around in somebody's desk. The human factor is a serious thing."

And after a slight breather, I continued:

"And imagine the pressure they will use to push the new application through. It has everything: the single 'good' of the main board, and funds and materials.... Your job is on the line. And you, quite frankly, could be weeded out with the next reduction of staff or reorganization."

"But the state would end up the loser," the idealist said sullenly. He had clearly lost his arrogance.

"There you have it! Now you have hit the nail on the head! What a loss! Instead of the millions which your innovation could produce, the poor state will have to be satisfied with crumbs. And all because of your idiotic stubbornness."

"What do I have to do with this?"

"And he still asks! Well think of what a precedent you have created. What will happen to us if everyone refuses to take on coauthors?"

And I described the gloomy consequences of Chelvakism (this is what this initiative was called). In the first place, I said, there would be an immediate decline in the return from the utilization of innovations, and technical progress would wither, and what we have now and what we have had previously would be in vain. Secondly, there would be a sharp reduction in the number of inventors and, consequently, the indicators of the work of our invention agencies would decrease sharply which, in turn, would lead to a

reduction of their numbers. And what would we do with all these people who have become accustomed to a sedentary life? You cannot put them on a machine tool or a drafting table. In the third place, there will be a sharp increase in the flow of altered applications which, naturally, will require additional capital investments for accommodating the new army of experts, and in the fourth place...in brief, I gave a complete list of future problems. And in conclusion I asked:

"Why do you want to harm our society?"

"Stop, will you...."

"And if you do not wish to do this, why not give in and take some co-authors. Or do not say that you have not been properly informed of the harm you may cause."

It was clear that the conversation had made an impression on the arrogant person, but for a final victory it was necessary to make one final effort, a kind of culminating agreement. And then I called Lidochka-Chelvikhe. I told her about her master's crazy idea and estimated the approximate share of the author's remuneration the Chelvaks could call on with a reasonable number of co-authors and asked her to help in subduing the loner.

"I will do that," the fool's wife answered resolutely. "I think 3 days will be enough."

And so, Comrade Chelvak! The practical female mind quickly prefers a bird in the hand to two in the bush.

That is what I was thinking as I was on my way to the base with a report about the work that had been done. The result was a kind promise to include me among Chelvak's co-authors. Any work for the good of the people should be rewarded. No, what do you mean, but it is nice to be useful to the society!...

On the fourth day Chelvak finally capitulated and turned the application in to Prototipova. In the column "authors" he had indicated one other name--of the chief of our main board! I do not know how that intriguer Lidochka managed to do this, and I will not try to figure it out. Who would have thought that she was close to such a superior. In truth it is easier to guess six numbers in the "Sports Lotto" than just one act of a good woman.

At the same time there came a command to make immediate preparations for the introduction of the innovation. The management does not talk with me. I have a recertification in front of me....

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## CONFLICTING MOTIVATIONS SATIRIZED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in  
Russian No 12, Dec 86 pp 214-215

[Article by Boris Ryabenkiy (Minsk): "Heavy Levity"]

[Text] To the Director of the Plant for Light Metal Structures

Having entered the movement "A Green Light for Heavy Rolling Stock," we encountered a chronically low coefficient of loading of cars by your enterprise. We warn you that if this continues in the future we will be forced to take strict financial measures against you.

Yours, Manager of the Railroad  
A. Matvechuk

To the Manager of the Railroad:

Having entered the movement "A Green Light to Economizing on Metal," we made a commitment to reduce the weight of our items by 10 percent. As a result of the aforementioned we can increase the coefficient of the utilization of railway cars.

Director of the Plant for Light Metal  
Structures  
I. Opalov

To the Director of the Plant of Light Metal Structures

Having entered the movement "A Green Light to Heavy Rolling Stock," we are experiencing immense difficulties because of your enterprise. By continuing to reduce the weight of your items, you have reduced the coefficient of loading of the railroad cars to the 1913 level. As a result of this we consider it necessary to impose fines. We are withholding 15,286 rubles and 10 kopecks from your account.

Yours, Manager of the Railroad  
A. Matvechuk

To the Manager of the Railroad

Having entered the movement "A Green Light to Economizing on Metal," we have made a regular commitment to reduce the weight of our items by another 7 percent. As a result of the aforementioned, as before, it is not possible to increase the coefficient of the utilization of railroad cars.

Director of the Plant for Light Metal Structures  
I. Opalov

To the Director of the Plant for Light Metal Structures

Having entered the movement "A Green Light to Heavy Rolling Stock," we are unable to operate normally because of the reduction of the coefficient of loading of railroad cars which continues by the fault of your enterprise. Because of this we are taking from your account 116,273 rubles and 9 kopecks. We are temporarily halting the dispatch of railroad cars.

Yours, Manager of the Railroad  
A. Matvechuk

To the Manager of the Railroad

Having entered the movement "A Green Light to Economizing on Metal," we are experiencing immense difficulties because of your railroad. I warn you, as a result of the lack of understanding of the importance of economizing on metal, in the future I will not respond to your claims.

Director of the Plant for Light Metal Structures  
I. Opalov

To the Director of the Plant for Light Metal Structures

Dear Comrade Opalov! Our railroad is experiencing an extreme need for lightweight and economic lighting masts weighing no more than 4 tons. (The less the better! We are releasing you from paying fines for the low coefficient of utilization of railroad cars. Thank you in advance.

Sincerely yours--Manager of the Railroad A. Matvechuk

To the Manager of the Railroad

As a result of the fact that the sum of fines for the low coefficient of the utilization of railroad cars is 2.5 times greater than the sum of bonuses for economizing on metal, we have increased the weight of our structures 3-fold.

We can offer you lighting masts weighing no less than 8 tons. Taking into account lack of fines our products will be the least expensive in the branch.

Director of the Plant for Light Metal Structures  
I. Opalov

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